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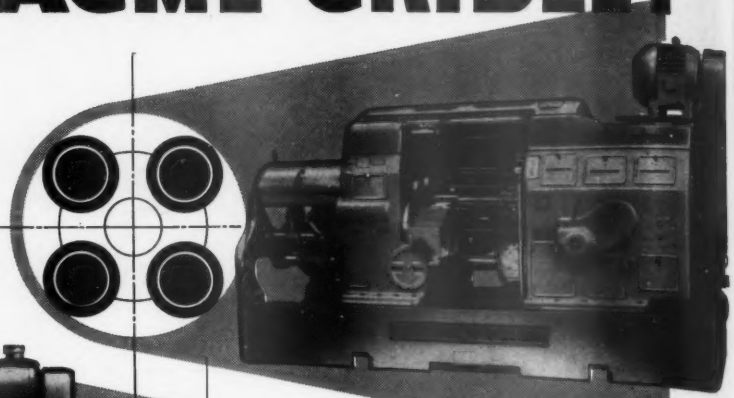

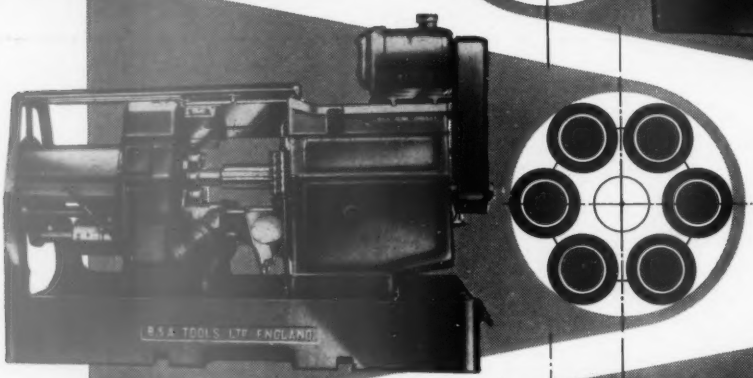

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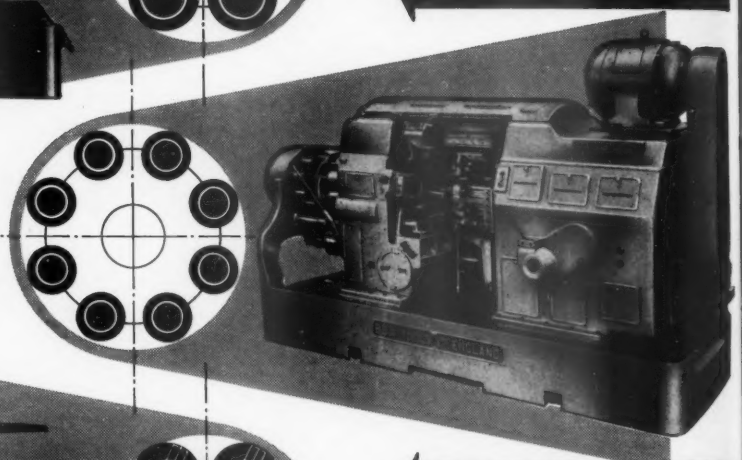

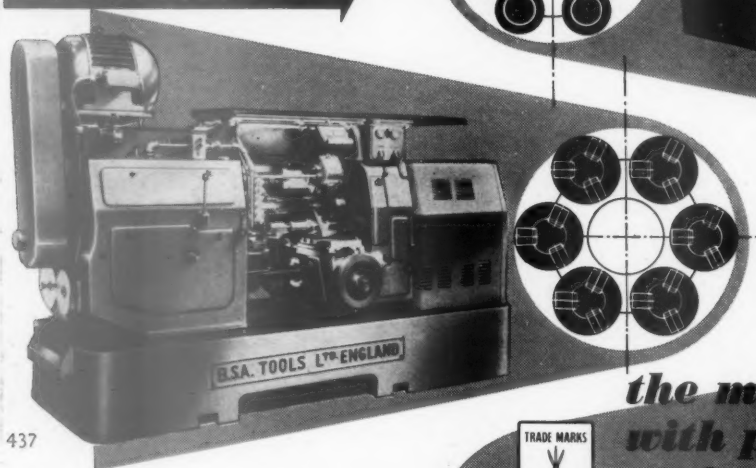

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Further Nationalisation Threatened

ALTHOUGH the new policy document of the T.U.C.—"Control of Industry"—is still in draft, on publication next month it may contain proposals for nationalising the locomotive rolling-stock and machine tool industries. Nationalisation is not mentioned at present in the document, which is couched in general terms acceptable to all the unions. Nevertheless, the T.U.C. has formulated general proposals for public ownership of the machine tool industry and has completed factual surveys of the mining equipment and railway rolling-stock industries. These now await formal discussion by the T.U.C. economic committee and consultation with the Confederation of Shipbuilding & Engineering Unions. At a meeting of the economic committee on June 11, Mr. Harold Wilson, shadow Chancellor of the Exchequer for the Labour Party, made it clear that no definite undertaking could be given to hold prices. For their part, the union leaders particularly avoided being held formally to the policy of wage restraint. In this atmosphere, the new proposals of the T.U.C. can only be viewed with alarm. Both the industries under consideration are comprised of relatively small, highly competitive units the very composition of which is a factor in minimising prices and increasing output. Experience has shown that nationalisation of any productive industry quickly results in a deterioration. With the elimination of the competitive factor from the home market, efficiency tends to drop and there is invariably a corresponding rise in prices. Against this background, the attitudes to price stability assumed by both Mr. Wilson and the union leaders make ominous reading. Strong competition from Continental and other manufacturers is already faced by British industry and the factor of cheap labour enters that presented by Asian producers. These facts are well known both to the Labour Party as a whole and to the unions represented by the T.U.C. It is difficult to credit the realisation of any of those good results envisaged by the advocates of this latest projected incursion into nationalisation. Doubtless, all the old arguments will be produced in its justification. Experience has so repeatedly shown these to be invalid that it would be profitless to repeat and counter them. But it is worth emphasising that three meals a day to 55 million people in this country literally depend on our export power. It would be foolish with open eyes to vote for two meals a day instead of three. Meanwhile, the Labour Party continues to foster working-class belief in an economic policy the substance of which is as mischievous as it is impracticable.

The Bus Strike Continues

THE first voting in the busmen's ballot on the proposal to return to work while negotiations proceed suggested that there was a majority in the garages in favour of a return to work. Nevertheless, as it proceeded, the more militant section gained its way and, by Tuesday evening, it was apparent on a straight garage vote that the feeling was against a return to work. There can be no doubt that the decision of the garages was contrary to the hopes and expectations of the union leaders as it was to the London Transport Executive and the London travelling public. It must place the leaders and certainly Mr. Frank Cousins, General Secretary of the Transport & General Workers' Union, in a difficult position. Both he and his negotiating committee have made it clear that they can see no useful purpose in a continuance of the strike. The present position is an example of the dangers which can arise from over-hasty action in the early stages of a dispute without due forethought as to the strength of the foundation on which it is based. The position as to the reduced number of buses to be run when the strike is over has been made clear by L.T.E., as reported on another page.

Transport Tribunal Report

REVISION of the British Transport Commission (Railway Merchandise) Charges Scheme, 1957, which came into force on July 1, 1957, was the important matter considered by the Transport Trbiunal during 1957, as indicated in its annual report. The Commission declared, on July 12, 1957, that all the maximum charges fixed by the 1957 scheme were to be treated from August 1, 1957, as increased by 10 per cent. An application was made to the Tribunal on July 30, 1957, for an order altering the 1957 scheme. The necessary public inquiry was held on November 20, 1957. There were no objectors, and the alterations were confirmed to come into force on February 1, 1958. The scheme submitted by the Commission on April 11, 1957, known as the British Transport Commission (Passenger) Charges Scheme, 1957, was intended to permit some increases in the maximum charges authorised by the 1954 scheme. The Tribunal's decision to confirm the scheme was made on August 6, 1957, and an order was made accordingly. As the public hearing had lasted seven days, and 41 notices of objection had been lodged, this must be considered creditably expeditious work, as indeed are most of the Tribunal deliberations, despite the many long statements of objections which must be considered.

Railway to the Canadian North-West

ANOTHER new railway planned in Canada is the 400-mile line from Waterways, in North-eastern Alberta, to Pine Point, on the south shore of Great Slave Lake. A proposal to build this line was made in the Speech from the Throne at the recent opening of Parliament in Ottawa. The railway will be the first to enter the North-West Territories, and is intended to open up the area served, where there are large deposits of tar-sand oil, gypsum, zinc, and lead. It will involve further co-operation between the Canadian National and Canadian Pacific Railways, as it will be an extension of the Northern Alberta Railway, owned jointly by the two major undertakings. The cost is expected to be $65,000,000, shared between the Government, the C.N.R., and the C.P.R. Diesel operation doubtless is envisaged from the outset. The Northern Alberta Railway management is expected to be responsible for the new line when completed.

Overseas Railway Traffics

PARAGUAY Central Railway receipts have shown a steady decline since mid-March in comparison with the 1957 equivalents after a marked improvement during January and February. At March 7, aggregate receipts from July 1, 1957, showed a decrease of G1,831,622 compared with the previous year, but at May 30, the decrease was G5,204,712. The recent decline may be attributable to the fact that amounts due from the Paraguayan Government are only settled periodically, and may well be omitted from the latest figures, also receipts during February were boosted by record dispatches of sugar. Salvador Railway Company receipts for April were colones 252,000, compared with colones 224,000 for April, 1957. Aggregate receipts for the period July 1, 1957, to April 30, 1958, were colones 2,299,000, compared with colones 2,698,000 for the corresponding period of 1956-57; a decrease of colones 399,000.

Traffic Created by Diesels in Scotland

DIESEL trains and railcars are certainly engendering passenger traffic in the Scottish Region of British Railways. The fast service between Edinburgh Waverley and Glasgow Queen Street over the former North British main line is reported to be entirely successful. The "inter city" multiple-unit buffet car trains are well appointed; one can only wish that the opportunity had been taken at the outset to stir public imagination by providing as many 50-min., or even 45-min. timings for the 47 miles non-stop, or with a stop at Edinburgh Haymarket, as could be worked by sets available. The present fastest timing of 55 min. westbound is fast enough often to influence a decision to go by train rather than by road between the two cities, but it is not startling, as this kind of innovation should be. A good beginning is being made on resuscitating Edinburgh suburban traffic with diesel sets; it will be interesting to see how long the Inner Circle and other Edinburgh local services will flourish once the novelty of railcar travel has worn off. Meanwhile, Glaswegians can look forward to electric suburban services.

Locating Railway Works in India

SHORTAGE of skilled labour in India has long been a main factor, second probably to water supply, in locating workshops. Some railways placed their works in population centres where labour at first was plentiful, but had later to be competed for with other industry. Some smaller plants were located at places, usually junctions, with good access from long sections of line, but remote from a large town. The East Indian Railway many years ago, at Jamalpur, and latterly the Government of India, at Chittaranjan, built works in comparatively remote places. Here, as at almost all other plants, it has been necessary to build self-contained railway colonies, where the amenities add to the attraction of good wages. The newly-formed North East Frontier Railway is now reported to have decided to build its carriage and wagon works at Bongaigaon, in Assam, for completion within three years. The site is in agricultural country on the right bank of the Brahmaputra, but east of the centre of gravity of the railway. As the area of workshops and staff quarters will be 1,500 acres, a self-contained community apparently is envisaged. The locality is not attractive to skilled urban workers; but no doubt there will be systematic training, as elsewhere, of staff drawn from the rural areas.

Commercial Value of High Speed

RETURN journeys in one day and over relatively long distances made possible by the fast schedules of a good many expresses in Britain and on the Continent are a good selling point for railway travel. In their desire to achieve speed some managements recently seem to have acquiesced in a reduction of comfort and reliability. In speed the aeroplane, and the helicopter over shorter distances, clearly have the advantage. The train must provide a degree of comfort impracticable in air travel. Certain diesel multiple-unit trains and long-distance railcars on the Continent are austere in their cramped seating and arrangements for refreshments. The French National Railways have achieved a happy medium in the "Mistral" and other very fast, but heavy, trains composed of side-corridor coaches and separate restaurant cars; most people like walking, not too far, to their meals. Too ample recovery margins encourage slack running; but to judge from recent accounts, ambitious schedules for fast passenger and goods trains on some Continental railways have resulted in gross unpunctuality when electrification or other works have been in progress, or there has been a little extra traffic on the line. The S.N.C.F. claims *exactitude* for its trains—which is more than can be expected from most air services. Very high speed must not be attempted when it jeopardises punctuality.

First Economy Cuts in Passenger Services

NEWS of curtailment of passenger services as an economy measure has been impending for over a month, ever since British Railways have been committed to find £10,000,000 a year for additional wages. There has been no certainty that main-line expresses will be affected, for such trains, which include many additional holiday services, in general are supposed to be good revenue earners. Many extra trains introduced from June 9 in the summer timetable may not be affected. The first reductions announced are certain Sunday trains in the Scottish Region, due to have been introduced last Sunday. Details are given on another page. The most notable services in question are steam trains in the Highlands and battery railcars on Deeside. Whether much more than day excursion traffic is at stake is doubtful. Sunday trains have long been rare in many parts of Scotland, as much probably because of railway staff costs and scarcity of population as of views on Sunday observance, for Sunday buses are relatively much more common. At all events the decision not to operate the Aberdeen-Ballater battery car service on Sundays has been badly received on Deeside. The decision of the other Regions now is awaited on the reductions, if any, in their summer services; some Regions may postpone their cuts until September.

New Trend in Motive Power Depots

A NEW stage in the design of servicing and maintenance depots in this country has been reached; this is in evidence in the Thornaby motive power depot of the North Eastern Region, opened by Mr. Harold Watkinson, Minister of Transport & Civil Aviation, earlier this month. The depot has been designed to allow for the easy conversion from the maintenance of steam to that of diesel and, later, electric locomotives. This last feature is the more noteworthy because electric locomotives are not expected to be used in the area served by the depot for some considerable time, as lines on South Tees-side are not

scheduled for electrification in the near future. It is not clear what features have been or are to be introduced to provide the additional facilities required for servicing electric locomotives once the depot has been equipped for dealing with diesels. Obviously provision must be made for the servicing of certain items of equipment peculiar to electric motive power, such as transformers and rectifiers. There may also be the need to provide more covered accommodation than would be required by other forms of traction because of the inability of some types of rectifiers to start from cold.

Best Use of Aluminium Alloys

AN important development in the application of aluminium alloys is in a prototype all-traffic container for use on British Railways' road, rail, and sea services, developed by the Northern Aluminium Co. Ltd. The container incorporates notable design features such as a flat top and the incorporation of lugs and feet to allow its being handled and stacked vertically by fork-lift trucks. The application of aluminium alloy with a steel strengthening frame raises the question of what constitutes the best application of this material in the interests, often conflicting, of cost, corrosion-resistance, weight-saving, robust construction, and ease of maintenance. Some comparison will be made between this container and the 50 Park Royal general-purpose all-aluminium alloy containers built recently for British Railways and described in our May 30 issue. That the best use is made of the characteristics of aluminium by using this material throughout a vehicle or component is open to argument. It is obvious that Northern Aluminium is not so prejudiced by interest in its own products as not to use other materials where these can give a satisfactory overall result. Extended to the field of passenger coaches, this would suggest, for example, a vehicle with a steel underframe, and an aluminium body and not necessarily one of all-aluminium construction.

Re-Signalling at Bloemfontein

BRITISH manufacturers' skill and experience have been used by the South African Railways in the equipment in the new signalling installation at Bloemfontein South, brought into use last month. The scheme included the provision and installation of some 24 colour-light signals, 15 searchlight signals, 19 multiple lamp route indicators, nine stencil route indicators, 51 position light shunt signals, 63 electro-pneumatic point mechanisms and 70 a.c. track circuits. All functions are controlled from a style "L" all-electric locking frame which is fitted with 147 levers and housed in a newly erected signalbox. The contract was carried out by the Westinghouse Brake & Signal Co. Ltd. This is believed to be the largest installation on the S.A.R. to have been brought into service recently. It is apparently associated with the future electrification in this part of the Orange Free State.

Direct Disobedience of Instructions

COLONEL D. McMULLEN'S report on the fatal accident at the Allanfearn level crossing on September 14, 1957, is summarised elsewhere in this issue. The crossing is legally of occupation status but is attended under an agreement entered into nearly a century ago by the then Inverness & Nairn Railway. The gatekeeper had received permission from the signalman at the station in rear to allow a motorcar to cross. He ought to have asked whether the train he had admitted to the section had cleared the crossing, but did not do so. He assumed. he said, from the time of the message that it must have done so, but in fact it was approaching the crossing at speed and, in the prevailing conditions, difficult to see or hear. It struck the car at some 50 m.p.h. and its occupant was killed. The signalman was careful with his ordinary duties but had become casual over the working of the crossing, "likely to lead to an accident sooner or later." Colonel McMullen points out that this is not a location suitable for trials with automatic barriers.

Labour Re-considers Transport Policy

REPORTS indicate that the Opposition is re-considering its transport policy. The recent labour disputes, and the serious financial position of the British Transport Commission, have no doubt stimulated it to do so as a matter of urgency. Resolution in regard to the future of nationalised transport are certain to appear on the agendas of both Trades Union Congress and Labour Party annual conferences in the autumn, and some statement on policy will then be necessary. Since de-nationalisation of road haulage under the 1953 Act, the Labour Party has made no new statement on policy but has frequently repeated its determination to re-nationalise road haulage. No attempt has been made, however, to define the extent of such re-nationalisation or how it is to be effected.

Although commercial road haulage constitutes only one section of the transport industry, the decision taken as to the extent and method of re-nationalisation could provide the key to Labour policy. It could reveal whether the Labour Party adheres to the principle of a transport monopoly as embodied in the 1947 Act, or whether it has modified its view and would tolerate competition between public and private enterprise. Until recently there were indications of some modification in Labour thinking and that the more moderate opinion favoured the latter. In view of the deterioration in the Commission's affairs and the hardening of trade union opinion as a result of the recent disputes, there now seems to be some reversion to thinking in terms of monopoly. One reason is the Opposition contention, as expounded in the April Parliamentary debate, that the present transport policy of the present Government, which is based on competition, has failed, that it has resulted in a waste of resources and has not succeeded in stimulating efficiency or achieving co-ordination. It was argued that the Government was therefore to blame, at least in part, for the financial troubles of the Commission. The Labour Party maintains that competition has failed, and it reverts to the alternative, namely, the principle of the 1947 Act; this was unification of all means of transport under common ownership, without which is claimed there could not be any effective co-ordination.

Because it holds this view it claims support in Sir Brian Robertson's paper to the Institute of Transport at Dublin earlier this, month, summarised in our June 6 issue. Although the Chairman of the Commission made it clear that he did not speak with political bias, nor intend to attack the Government, the principles he stated came close to those enunicated by the Opposition. It is the basic princple of the 1953 Act, as defined by him, that co-ordination wase best left to work itself out through the competitive processes, that the Opposition persists has failed. Hence its return to the alternative which it considers meets Sir Brian Robertson's requirement that "Governments should have a transport policy and should exercise sufficient controls to ensure a co-ordinated public transport system best designed to serve the interests of the country as a whole." That is precisely what the Opposition claims for its policy.

The fact remains, however, that under neither Conservative nor Labour transport policy has co-ordination been completely achieved. From the establishment of the Commission in 1948 until change of policy co-ordination made slow progress. The trade unions were partly responsible. Differences among them as to the allocation of work prevented "integration" of rail and road transport as proposed by the Commission and far less was achieved in this field that should have been possible. Agreement among the unions was finally reached too late, on the eve of the change of Government in 1951, and of policy. It was then discarded as redundant. The attitudes of the respective transport and railway unions during recent disputes does not indicate that any happier inter-union relationship can be relied upon next time.

Previous experience should have taught the Labour Party and the unions that integration and co-ordination do not follow automatically on unification under common owner-

ship. Sir Brian Robertson in his speech accepted that even as at present organised the Commission could have achieved more in this respect, and should now do so. But presumably he recognised that its extent was limited, as he looked to Governments to assist through the methods at their disposal, namely investment and fiscal policy, licensing and control of fares and charges. Before Labour finally commits itself to a transport monopoly as the only means of obtaining the co-ordination it favours, it should consider whether all means to achieve it within the present framework have been exhausted. Its efforts might be equally usefully directed at exploring with the unions how it can better be achieved within the Commission as at present constituted, as they would be in formulating plans for the re-nationalisation of all long distance road haulage, and the nationalisation of road passenger transport, which, presumably, monopoly would also involve.

The Future of Coal Traffic

THE difficulty of assessing the amount of coal class traffic to be expected by British Railways is aggravated by fluctuations in output and by possible alterations in the trends of despatches, caused by changes in policy as to stocking and despatch. The average monthly tonnages conveyed during the past 10 years since nationalisation have remained steady at about 13,000,000; the main departures from this were the rise to nearly 15,000,000 in the second four-week period of last year, when many coal consumers were stocking up, in the weeks after the Suez incident; and the fall to a little over 9,400,000 tons in Period 8 (July-August) of 1957, when absenteeism and disputes caused a drop in output. The complexity of coal distribution, bearing in mind the various categories of coal and the many consignees, whose demands fluctuate, vitiates comparison as between periods of the total tonnages conveyed by British Railways. The fact, for instance, that the total railborne tonnages during the first four four-week periods of the current year were respectively 12·9, 13·8, 13·4 and 12·5 million means little.

If total despatches by all means of transport were about the same, it is probable that the varieties of coal which consumers and coal distributors caused to be consigned to them were those deemed more suitable for movement by rail. It by no means necessarily shows that coal class traffic, by rail, or the railways' share of it, is dropping off permanently. Here it must be stressed that the mode of transport is not normally the choice of the National Coal Board, but that of the buyer, the consumer or coal merchant, subject to the limitations imposed by available loading facilities. There is also the flexibility afforded by railway movement, referred to below.

The report, published last week, of the Committee of Inquiry into Coal Distribution Costs in Britain repeats the statement by the National Coal Board that roadborne supplies are growing. Most of what is moved by road is by short hauls from collieries, for local consumption, including miners' coal. For the reasons stated above, it would be unwise to assume a permanent diminution in railborne supplies. Many transits by coastal shipping are preceded by rail hauls from pitheads to staiths. The fact remains that many buyers of coal are prepared to choose road movement if they find it convenient, and railway traffic officers must often bargain hard for what they are trying to secure. In this they are helped by the freedom accorded them by the charges scheme of 1957. The British Transport Commission intends to make a progressive and systematic review of the 500,000 individual coal rates still, or very recently, in force, with a view to evolving a new and flexible system of charges. It is to consult representative bodies of traders in the development of the charges system. The report into coal distribution points out that there may well be substantial changes in the structure of railway rates for coal, and it suggests that the Minister of Power should from time to time seek assurances that the transport element in the zone delivered and f.o.b. prices for fuel reflects accurately the current freight charges of the Commission. By and large, it is probable that over medium and longer distances the rates quoted by the railways are both attractive to the coal buyer and profitable to British Railways. As measures provided for in the modernisation plan are implemented, such as the construction of marshalling yards, which contribute to lowering operating costs, the profitability of coal traffic may be expected to increase, though margins may have to be cut to meet road competition.

The layout of pitheads, many constructed in the age of railway monopoly, has some bearing on the amount of coal despatched by rail. The National Coal Board has stated that it has not sought to encourage the movement of coal by road by reconstructing loading facilities to accommodate road vehicles; and it considers that the bulk of supplies for inland consumers must leave the collieries by rail to ensure regular working. It is doubtful whether the ability of railways to provide flexibility and regularity of delivery through skilful use of wagons is appreciated by those outside the railways who do not consign, or receive, railborne traffic on a large scale. The fact that there are wagons—but not too many of them—"in the pipeline" makes for regularity in placing empties for loading and in delivery at destination. This is a characteristic not shared on the same scale by road haulage in the case of commodities such as coal.

Depot facilities are a deciding factor in the choice of transport of household coal. The majority are rail served, on railway land, and equipped for dealing with railborne traffic. A good deal can be done by co-operation between the railways and the coal merchants to concentrate traffic to allow such benefits as the running of shuttle trains of 21-ton wagons on regular services between collieries and depots, so obviating the use in these cases of wagons of 15 tons capacity—the size to which accommodation at certain pitheads restricts many wagons. There are other obvious benefits in railway operation to be derived from such concentration, apart from increased possibilities of mechanisation of coal depots.

Such mechanisation is largely a matter for the traders, with help as necessary from the railways in laying sidings, and so on. Present indications are that the installation of mechanised equipment is costly, and unlikely, in the view of some coal merchants, to secure economies. On the other hand, shortage of manpower in depots is likely to hasten it. Meanwhile an example of a fully mechanised coal depot in the London area, the result of co-operation between Charrington, Gardner, Locket & Co. Ltd. and the Eastern Region of British Railways, is to be opened at Palace Gates next month.

Cutting a Dead Bough

RECOGNITION that the dead wood of British Railways, the lines which do not and cannot be made to pay, and render no great service to the community, must be cut boldly will be given effect by the decision in principle to close the Midland & Great Northern line. The decision is that of the Eastern Area Board, announced last week, to close the line by stages, of which the first is to be completed by the end of this year. When all the mileage concerned is closed, it is expected that the economies realised will amount to £500,000 a year, and some heavy expenditure on new works will be avoided. This will go some small part of the way to help find the £10,000,000 a year needed to provide the 3 per cent wage increase awarded to British Railways staff. It will not, however, affect results for 1958, during which an additional £5,000,000 must be found for additional wages; and the Government has stressed that some economies must be realised in the current year, if the railways are to justify re-accleration of the modernisation plan. Details of the proposals are given on another page. Some 180 miles of line in all are affected, and about 1,500 railwaymen—a much larger cut, in its entirety, than the whittling away of unremunerative services that has been going on for the past 30 years, and accelerated in attempts since nationalisation to effect urgently needed savings in operating costs. The British Transport Commission was faced six weeks ago with the necessity quickly to make proposals

for substantial economies. The speed with which the Eastern Region has submitted its proposals for closing the M.G.N. line is the result partly of a previous study by the staff of the Region of the benefits to be derived; the line clearly is of a kind to have invited early investigation into its possible redundancy.

No better choice could have been made for closing one complete and self-contained group of lines. Reception of the Eastern Area Board decision by the communities served by the Midland & Great Northern Line in the Eastern Counties, so far has been favourable. This goes to show that the line has ceased to serve any important purpose. It is a duplicate route, one of several in Britain built in the optimistic period of railway expansion in the last century. Until grouping in 1923, when the Great Eastern and Great Northern Railways were amalgamated in the London & North Eastern, it provided healthy competition with the G.E.R., more particularly for passenger traffic between Norfolk and London and the North—but it was run at a loss for many years. Grouping removed its one raison d'être. Its lines are everywhere approached by those of the former G.E.R. and of other components of British Railways. No community served by the M.G.N. is more than 13 miles from another line, and most are much less far. As the map on page 715 shows, traffic, including passenger trains at a few summer holiday week-ends between the Midlands and the Norfolk coast, can be moved by parallel routes. For local passenger traffic, the area is served by a network of buses. Experience with diesel railcars introduced on other lines in comparable rural areas has suggested that there is no hope of creating sufficient traffic by this means to justify the expense. The agricultural community will not be seriously incommoded by the average extra half-a-dozen miles added to the distance to and from freight railheads. The Minister of Transport, Mr. Harold Watkinson, has stressed that railway users must be realistic when faced with the withdrawal of unremunerative railway necessary to effect economies. In this case, they are hardly called on to make concessions to such realities, for the hardship involved is small. In any case, all users of the line will have ample opportunity to raise objections before the revelant Transport Users' Consultative Committee.

There must be regret at the passing of what was once a remarkably efficient self-contained concern—even although it was never profitable. But the old Midland & Great North Joint, a pioneer, with the aid of automatic-changing apparatus, in fast running on single lines in an attempt to provide competitive express passenger services, and an excellent training ground for operating and engineer staff, ceased to exist in 1914. With its well-maintained permanent way, stations, and locomotives—it was the only railway other than the L.B.S.C.R. to have yellow livery for its engines—it existed in and for the age of competition between relatively small railways. That age is long past. The line is now dead wood. The sooner it is cut away the better.

Indian Railways in 1956-57

THE report by the Indian Railway Board for the year ended March 31, 1957, a copy of which has been sent us by Mr. P. C. Mukerjee, Chairman of the Railway Board, again announced a remarkable number of records including gross earnings; goods tonnage, ton-mileage and earnings; and passenger mileage; wagon-miles and net ton-miles per wagon-day; net ton-miles per goods train-hour; and goods train loading. The year under review was the first in the Second Five-Year Plan period and was notable for the rapid development in the economy of the country, particularly in respect of industrial production. On the railways it proved satisfactory in the progressive effort to attain greater efficiency and increased output of rail transport.

Consequently, the gross earnings of all railways in the country totalled Rs. 350·55 crores (nearly £263,000,000) as compared with Rs. 317·51 crores in 1955-56; passenger earnings increased by all but 8 per cent and goods earnings by 13 per cent. The following are some of the principal operating statistics for the years 1955-56 and 1956-57:—

	1955-56	1956-57	Percentage variation
Passengers originating (millions) ..	1,297·4	1,382·5	+ 6·57
Passenger-miles (millions)	39,083·3*	42,194·5	+ 7·96
Passenger earnings (Rs. crores) ..	108·75*	117·4	+ 7·94
Average passenger journey (miles) ..	30·1	30·5	+ 1·33
Freight tons carried (millions) ..	115·3	125·4	+ 8·77
Net ton-miles (millions)	36,472*	40,225	+10·3
Goods earnings (Rs. crores)	177·92	201·1	+13·0
Average miles a ton of goods was carried	316·4	320·8	+ 1·39

* Revised figure

The gross traffic receipts (including suspense) of the Government Railways totalled Rs. 347·57 crores, and working expenses Rs. 233·94 crores, leaving a net traffic revenue of Rs. 113·63 crores. After deducting Rs. 45 crores for depreciation and Rs. 10·25 for miscellaneous items, there was therefore a surplus of Rs. 58·38 crores. From this Rs. 38·16 crores were appropriated to meet the statutory dividend due to Government central revenues. The final credit balance of Rs. 20·22 crores was allocated to the Development Fund. The train-mileage on Government lines increased by 7,130,000 or by 3·60 per cent over the 1955-56 figure, passenger train-mileage rising by 2·70 per cent. Punctuality of trains deteriorated on both 5 ft. 6 in. and metre-gauge lines. Goods train-mileage totalled 86,640,000 or 4·85 per cent more than in the previous year. Net ton-miles per wagon day increased from 541 to 570 on the broad- and from 203 to 210 on the metre-gauge system.

During the year under review the divisional system of organisation and operation was completed on the Central, Southern and Western Railways. Under the United States Technical Aid Programme the Government of India had entered into a contract with Messrs. Sanderson & Porter, Engineering Consultants of New York, on February 10, 1956, to study the most practical methods of equipping the Indian Railways on (*a*) a short- and (*b*) a long-term basis, to meet rapidly-expanding traffic. The measures to be considered included under (*a*) yard lay-out, shunting equipment and techniques, signalling, water facilities, crossing loops, gradients, workshops and out-station maintenance. Under (*b*) the long-term considerations included increases in train weights and lengths, automatic couplings, rolling stock design, motive power, brake equipment, the best combination of steam and diesel traction, and line doubling. A third subject for study was the movement of coal and other bulk commodities by rail-cum-sea transport.

The firm's team submitted a preliminary report as a result of which it was entrusted with the detailed study of (1) the improvement or modification of the "WG" class locomotive, (2) broad outlines of a more powerful locomotive, (3) central buffer-couplings for wagons, (4) C.T.C., (5) the transport of coal and (6) of iron ore, and (7) rail-cum-sea shipment of bulk commodities. The team's investigations were still being carried out at the end of the year, but its reports were due in September, 1957.

During the year ended March 31, 1957, five new sections of line totalling 95·82 route-miles were opened for traffic, as well as 20·07 miles of previously-dismantled line restored. Eleven sections totalling 569·95 miles were under construction, the longest being the Khandwa-Hingoli metre-gauge link, 187·23 miles. No lines were closed and none were taken over from private owners during the year. Surveys for 22 new projects were sanctioned. Cyclones and floods caused extensive damage in different parts of the country. Fifteen sections totalling nearly 375 miles were being doubled. Though 88 route-miles of electrification in the Howrah-Burdwan area had been sanctioned in 1954 on the 3,000 V. d.c. system, it had become apparent during the year under review that the 25-kV., 50-cycles, single-phase a.c. system had many advantages, and results of experience gained in other countries were being considered by the Railway Board.

Progress of the Ganges Bridge construction works has been fully reported from time to time in these columns.

No fewer than 579 new locomotives were placed in traffic during the year, 322 of 5 ft. 6 in., 254 of metre, and three of narrow gauge. A further 390 were ordered, 278 broad, 100 metre, and 12 2 ft. 6 in. gauge. Orders for "WP" class broad-gauge engines went 30 each to Poland and Austria, as well as 36 to Chittaranjan; 82 "WG" class were also ordered from the latter factory. Tatas received orders for 80 "YG" and 20 "YP" class metre-gauge locomotives. The 12 "ZB" narrow-gauge engines were ordered from Jugoslavia. Moreover, orders were placed for 100 diesel locomotives from the U.S.A. Meanwhile, 565 broad-, 704 metre- and 32 narrow-gauge coaching vehicles were placed on line; of the broad-gauge coaches 184 had been delivered by Hindustan Aircraft Limited. One hundred and fifty-six metre-gauge coach shells were imported as well as 45 broad- and 16 metre-gauge multiple-unit electric coaches. Orders were also placed for 480 broad- and 300 metre-gauge coaching units in India, and for 24 railcars from abroad. In terms of four-wheelers, 17,968 broad- 13,936 metre-, and 120 narrow-gauge goods vehicles went into service during the year; the corresponding numbers ordered were 29,311, 7,083 and none.

Vestibuled de-luxe trains were introduced during 1956-57 to run between Delhi and Howrah (Calcutta), Bombay, and Madras. Sleeping accommodation for third-class passengers was provided on seven pairs of trains and fans were fitted in 1,306 additional third-class coaches. Departmental catering was introduced on those major railways on which it had not previously been in service.

LETTERS TO THE EDITOR

(*The Editor is not responsible for opinions of correspondents*)

Smoking in Trains

June 15

SIR,—Mr. Johnson's factual letter published in your June 13 issue points to the different attitudes to smoking in trains in this country and on the Continent.

On the Continent it is not customary to attempt to smoke in non-smoking compartments by asking other occupants if they mind. In this country, especially in the crowded trains during the war, smokers habitually asked other passengers in non-smoking compartments if they minded smoking, and were quite aggrieved if non-smoking passengers claimed their rights. This made it difficult for railway managements to uphold the rights of a minority of their passengers.

Recent statistics on lung cancer have altered the public attitude to smoking and should assist British Railways to tighten up non-smoking regulations more in line with the custom so strictly observed on the Continent for many generations.

I am, sir, a non-smoker who does not mind others smoking.

Yours faithfully,

CUTHBERT GRASEMANN

8, Napier Court, S.W.6

Origins of D.C. Voltages

June 9

SIR,—I read with interest the editorial article in your June 6 issue, but I think that two items stand in need of correction.

Whilst it was undoubtedly true that d.c. railway voltages in this country tended to develop in multiples of 600, it should be emphasised that this voltage was merely a nominal one—a fact subsequently recognised in B.S.S. 173.

Furthermore, although it was not too difficult to arrange for the comparatively generous motor frames of the 1900s to withstand high voltages to earth, winding armatures for full line voltages of over, say, 2,000 V. and obtaining satisfactory commutation was, and still is, another matter. In this connection, the original Dick Kerr experiments on the Bury–Holcombe Brook line, using 3,600 V. (nominal) on the contact wire, used two 1,800-V. (DK23A) motors in permanent series; series-parallel control was used with a four-motor group.

Subsequent Manchester-Bury electrification, however, always has used four-motor equipments, each motor (DK28) being wound for line voltage (1,200), with series-parallel control being used, and every motor capable of being cut-out on a set independently of the remainder—an unusual feature even for those days.

You have been very fair in your assessment of the reasons for the retention of a unique and bold system—the Aspinall third rail. I feel, however, that the reasons for the adoption of this system in 1914 apply as much today as they did then. Even with modern techniques in overhead line insulation, reduced clearances and so on a 6·6-kV. a.c. overhead line would be no more practicable on this line today than a 3·6-kV d.c. line was when Sir John Aspinall investigated its possibilities in 1913. The two major obstructions to overhead electrification exist still: Whitefield and Collyhurst tunnels both have sharp curvature and reduced clearances, besides the many overbridges under which the track has already been sharply graded to obtain requisite clearance.

Yours faithfully,

D. G. OUSEY

86, Daleside Road, Pudsey, Yorks.

Curtailment of Passenger Services

June 10

SIR,—Your correspondent Mr. D. J. Manton, in your May 23 issue, oversimplifies the position as far as the former Great Central Railway is concerned. Paddington might cope with the G.C.R. main-line trains, which could be paired in the timetable with Birmingham trains to Ashendon or Banbury, and they would probably be better patronised if run from a better recognised London station, but St. Pancras would be better than Paddington. Paddington, however, cannot even expand its existing suburban service—there are some long gaps in the evening rush hour—because of line occupation; and it could certainly not cope with the Ruislip-Wycombe suburban trains. Nor could Baker Street deal with the service to Aylesbury and beyond in addition to its proposed intensive electric service to Amersham and Chesham.

A short length of line might be built from the south end of Lord's Tunnel, St. John's Wood, on the G.C. line. This would eventually be extended to the South-East suburbs as Route "F"; meanwhile it could terminate in a two-platform arrangement with scissors crossover at Baker Street or Paddington. Adequate ventilation for diesel multiple-unit trains should be possible.

It seems that freight traffic on the G.C. line is likely to increase in connection with the marshalling yard at Swanbourne. The Grendon Underwood-Ashendon line will have to be retained for this traffic.

Proposals for fewer main line stations never seem to be taken up. A new "Trinity" station at Manchester was proposed some years ago (to take the place of Victoria, Exchange, and Central) and the closing of Liverpool Central by using existing junctions at Allerton and handing over the Central tunnels for an extension of the Mersey Railway. Birmingham is another example where it is understood that New Street is to be rebuilt, but provision for Snow Hill traffic is not to be made.

Yours faithfully

R. G. R. CALVERT

45, Woodwaye, Oxhey, Herts.

THE SCRAP HEAP

E.A.R. Stationmaster Wins Sweep

Mr. Pallikandy Poovan Lakshmanan, who drew the winning Derby horse, "Hard Ridden," in the Irish Sweepstake, is stationmaster of Bukene, on the Tabora-Mwanza branch of East African Railways & Harbours.

Light Fingered

The Eastern Railway of India suffered a loss of about £3,750 in a single month—last January—in the theft of train-lighting equipment from coaches. Some 19,500 ft. of cables and nearly 10,000 ft. of dynamo belting, innumerable Kent couplers, lamps, switches and fans were removed. During the last war, thefts of lighting equipment, more particularly bulbs, from passenger stock on some Indian railways were very great. On at least one system, the Bengal Assam, removal of bulbs was checked by means of a wire mesh fixture.

Care for Disabled Passengers

(*See our May* 30 *issue*)

There is a serious side to my tailpiece on the Bath railway station notice about the lift for "invalid passengers and staff." Captain L. E. Porter, R.N., organising secretary of the Multiple Sclerosis Society, informs me that recently a member able to walk only with difficulty found to his astonishment that before he was allowed to use a lift he had to sign an indemnity. He wrote to British Railways, and now the regulations have been amended to let any disabled person use a lift so long as it is worked by a British Railway employee. Hence, apparently, the notice I quoted. Captain Porter says his society finds that British Railways do all they can to help disabled travellers.—*"Peterborough" in "The Daily Telegraph."*

The Newhaven/Dieppe Steamer Service

(*See our June* 13 *issue*)

Reference to the beginnings of the Newhaven/Dieppe service was made in a L.B.S.C.R. Company report signed by the Chairman, Samuel Laing, and dated July 14, 1851. The report states: "The principal result hitherto obtained from the [Great] Exhibition (opened on May 1) has been the establishment of a cheap and direct route between London and Paris via Newhaven and Dieppe. The failure of former attempts threw great difficulties in the way of the establishment of this route, but arrangements having been made with the French railway companies for booking through at reduced rates, parties have been induced to place steamers on the line, and the enterprise has proved successful. The influx of passengers . . . has been so great that it has become necessary to provide two passages each way daily."

In a report dated July 20, 1863, it is stated that "The powers granted to the Company of owning and working steamboats have been put in operation and since July 1, the service between Newhaven and Dieppe has been performed by vessels belonging to this Company and the Western Railway Company of France. The new paddle steamer, *Alexandra,* is now on the station, and both as regards speed and accommodation is everything which can be desired. The amount of this Company's capital invested in the steamers now plying on this route does not exceed £15,000."

Dead and Alive

Richard Pike, the compiler of "Railway Adventures and Anecdotes" (1888) told the story of his journey by an early morning mail train from the Midlands to the West of England. "At Taunton," he said, "I perceived a crowd of persons gathered at the front of the train. I went forward and saw a corpse was being removed from the van to a hearse outside the station. On reading the inscription on the coffin plate I was somewhat taken aback to find my own name. So Richard Pike living and Richard Pike dead had been travelling by the same train."

Rustic Style Station

A "rustic" timber station was to be a feature of the private railway serving Shane's Castle, Co. Antrim, the seat of Lord O'Neill, who in 1858 planned to build a branch line from Antrim on what is today the Belfast-Londonderry main line of the Ulster Transport Authority. The station platforms were to be of larch logs, laid side by side and set up on trestles. A siding was to serve the home farm for the transport of agricultural produce and cattle. A neighbouring nobleman refused to grant wayleave through his estate and the scheme had to be abandoned.

On the Track

To some maybe a railway track
Serves but to get one there and back.
The lengthman views it otherwise,
For, to his shrewd, far-seeing eyes,
Each cherished mile of burnished rail
Seems like the blazing of a trail
Whereon he toils through sun and rain
To expedite his lord, the train,
The subtle curves, the gradients
Are monuments of maintenance;
But he prefers to contemplate
Those lovely, gleaming lengths of
"straight,"
Stretching to where earth mates with sky
And links him with infinity.

He ponders those twin talking-points,
Flat-bottom rails and welded joints;
And, from a ballast heap or two,
Creates a regal avenue,
The product of his toil and sweat,
At once his idol and his pet.
For him no perfume can compare
With pungent, creosoted air.
Contentedly he comprehends
That duty pays rich dividends
And, as a proper craftsman should,
Looks on his work and finds it good.

A. B.

Locomotive Development in Ireland

(*See our May* 23 *issue*)

Three-cylinder 4-6-0 *of the former Great Southern Railways, built in* 1939, *G.S.W.R.* 0-6-0 *of* 1880, *and Bury locomotive of* 1848, *with Metrovick* 1,200-*h.p., and Birmingham* 960-*h.p. diesels* (*right*) *displayed at Inchicore Works*

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Reduced Rate for Copper

The rate for copper has been reduced substantially. Since May 1 the Northern Rhodesia copper mines have been accorded a reduction of 25s. a ton.

Exhibition of Railway Equipment

Rhodesia Railways took a prominent part in the Salisbury youth week, which was held from June 1 to 8. Besides an exhibit at the show-ground, rolling stock and locomotives were on view to the public at the show-ground siding. The main stand included a photographic display emphasizing careers for youth in the railways as well as other interesting aspects of rail transport in the Rhodesias. Scale models illustrated the advance in telecommunications and signalling.

At the show-ground siding on May 31, the lounge-dining car twin-set *Kafue* was displayed, with a 2,000 h.p. diesel-electric locomotive. *Kafue* is normally employed on mail trains North of Bulawayo. On June 1 the diesel-electric was again on display, and on June 2 and 3, a "9b" class steam locomotive was available for public inspection.

INDIA

Eastern Railway Accelerations

With the electrification of the Howrah suburban lines of the Eastern Railway the running time of the local service to Tarakeswar, 34 miles, has been reduced by from 31 to 62 min. in the summer timetable. The principal mail and express trains on that system also show a general acceleration. Local services to and from Burdwan, both by the chord line and via Bandel, have also been speeded up.

VICTORIA

Keeping Suburban Trains Warm

The installation of heaters in new multiple-unit electric stock for the Melbourne suburban services is not considered necessary. The management has pointed out that "Seats immediately inside the doorways of the 'blue trains' are protected against draughts by plate-glass, but if passengers leave doors open there's nothing we can do" and that it is impossible to have draught-free trains if passengers leave doors open on chilly mornings.

The rotary ventilator systems in the new trains clear stale air and circulate fresh air every six min.

"Train of Knowledge"

Two hundred high school boys and girls with their teachers have been taken by special train on a round trip of 751 miles through the State, from Melbourne. The tour included visits to farms, orchards, and factories.

Known as "TOK," the train was equipped with a public address system, and projection equipment was carried. A daily newspaper was produced on the train by the boys and girls. Meals and sleeping accommodation were arranged at various country towns.

Sponsored by the Macleod High School and operated by the Victorian Railways, "TOK" is reported to have proved a valuable experiment in education.

JAPAN

New Rail Tunnel Proposed

The National Railways propose to build a railway tunnel some 8½ miles in length between Tsuruga and Imajo on the west coast of Honshu under the current modernisation plan. This will be the longest railway tunnel in the country, exceeding the length of the Shimuzu Tunnel by over two miles. The cost will be in the region of £9,000,000, and it is hoped to have the work completed by 1961.

PHILIPPINES

Manila Railroad Extension

Construction is to start immediately on a 200-mile extension of the Manila Railroad from San José to Tuguegarao. The Government has allocated an initial $4,000,000 for this purpose, while the balance of some $76,000,000 will be realised from the sale of bonds and Japanese war reparations.

ISRAEL

Augmented Passenger Services

In the summer timetable some new trains have been introduced to deal with the heavy traffic of the Festival Year. Twelve trains run daily each way between Tel Aviv and Haifa. Diesels cover the 65 miles in 65 min. Seven run daily between Jerusalem and Tel Aviv; travel time has been cut to 1 hr. 45 min.

CANADA

Tender for New Railway

L. J. Severson, President of Quebec Cartier Mining Company, a wholly-owned subsidiary of United States Steel Corporation, has announced that tenders have been called for the construction of a new railway to tap iron ore deposits in the Mount Reed—Mount Wright region, northern Quebec. The railway would run from Port Cartier about 25 miles west of Seven Islands, to Lac Jeannine, 193 miles north. Construction is expected to take two years.

Extra Labour for C.N.R.

Canadian National Railways are employing 3,600 extra men in the Western Region this year. They will supplement the 6,600 regular Western Region track, bridge, and building workers engaged on routine maintenance on the C.N.R. six-year Western Region track improvement programme.

The men will assist in laying heavier rails and rock ballast, installing signals, and in carrying out other improvements. The summer work programme this year will be carried out on all divisions in the Region, which comprises 12,160 miles of main line, and 2,400 miles of spurs, sidings, and yard tracks.

UNITED STATES

C. & O. "Chessieliner"

The Chesapeake & Ohio Railroad has exchanged with the Chicago & North Western Railway three lightweight Pullman-Standard coaches for three R.D.C. diesel-hydraulic railcars. The latter have been formed into a three-car assembly which has taken over the working of the train known as the "Sportsman" between Newport News and Charlottesville, 182 miles each way, and of the "George Washington" between Newport News and Richmond, 85 miles each way, a total of 534 miles daily. The three R.D.C. cars seat in all 240 passengers.

The "Twentieth Century Limited"

The announcement of the withdrawal by the New York Central System of the "Twentieth Century Limited" between New York and Chicago appears to have been premature. On April 27 the "Commodore Vanderbilt" was withdrawn between the same points, and as compensation for this loss, reclining chair coaches for the equivalent of second class passengers have been added to the formation of the "Twentieth Century," an addition made possible, as last summer, because of reduced Pullman patronage during the summer months. In 1940 the New York Central ran eight trains each way daily between New York and Chicago, sometimes in several sections. Now the service is reduced to four each way.

ARGENTINA

Rationalisation in Rosario

The draft project of the recently appointed special committee for the reorganisation and rationalisation of railway access to Rosario has been approved, and the drawing up of the definite scheme will now be undertaken.

Accidents

A serious accident took place in La Plata on May 7, when a General Roca Railway train from Lezama to La Plata collided at a level crossing with a tram overloaded with passengers. The crossing was protected and visibility was good. Fifty tram passengers were seriously injured and one killed.

Another accident occurred on the General San Martin Railway a few days later when a local train from José C. Paz

to Retiro was shunted into a siding to allow the express "El Cuyano" from Mendoza and San Juan to pass. The last coach of the local train fouled the main line, and the express ran into it. There were no casualties, but damage to rolling stock is reported to have been extensive.

Strike Averted

Another strike on the D. F. Sarmiento Railway was averted when the authorities decided to pay staff for time not worked during the recent stoppage. It was stressed that this was done as an exceptional measure, so that the new management should be able to start work with a clean slate.

Fares Reduced

As from the national holiday on May 25, the increase of 25 per cent in passenger fares decreed in May, 1957, has been annulled. In view of losses on working already being incurred, the cost of the reduction will have to be borne by general revenue.

Diesel Haulage on Sarmiento Railway

The D.F. Sarmiento Railway has replaced steam by diesel electric traction on its services between Moreno, Luján and Mercedes.

ITALY

Diesel Working in Sardinia

Diesel units have now replaced steam for passenger services on all the Sardinian lines except for the branch from Tempio to Palau Marina (for La Maddalena); goods trains continue to be worked by steam locomotives. Diesel working has resulted in considerable passenger train accelerations. On the 22-mile Alghero to Sassari line, the overall journey time has been reduced to 45 min., including stops, from 2 hr. 15 min. with steam haulage. Fares have been increased. The railcars are equipped with loudspeakers, through which music is diffused en route.

The fastest passenger timing between Olbia (the terminus of the steamer service from Civitavecchia) and Cagliari is by the diesel connecting with the overnight steamer, which now sails daily.

Photo] *[K. Westcott Jones*

Fiat railcars in tandem at Alghero Station, Sardinia, on first day of diesel operation of metre-gauge line to Sassari

DENMARK

Osterport Station, Copenhagen

At the Osterport Station in central Copenhagen, the four-track line is below street level. The Danish Society of Technical Museums, which has been seeking a site for a technical museum, to incorporate a railway museum, believe, Osterport Station seems the best place. At the same time a private firm wished to erect two large office blocks on the premises. These plans have been combined. The firm rents land from the State Railways and is building the office blocks and the technical museum.

One of the office blocks is on the site of the present station building. New station premises are arranged on the ground and first floors of the office building. From the station concourse stairs lead down to the platforms. Passenger subways from the platforms under the street will ease street congestion at peak hours caused by passengers crossing on foot from or to the station.

Diesel-Hydraulic Traction Tests

The announcement in *The Railway Gazette* of March 21, that the State Railways might adopt hydraulic transmission for freight locomotives, if a satisfactory result were obtained in a series of test runs with a diesel-hydraulic locomotive, is incorrect. Adoption of hydraulic, instead of electric, transmission for line locomotives is not envisaged at present.

Publications Received

The Locomotives of the Great Western Railway. Part 5: Six-Coupled Tank Engines. The Railway Correspondence & Travel Society. 8 in. × 6 in. 96 pp. Price 15s.—This booklet, one of 12 parts, covers the G.W.R. six-coupled tank locomotives except for the standard 2-6-2 classes, which are to be dealt with in another part. The many photographic reproductions and line drawings are up to the standard set by previous publications in this series. Copies may be obtained from the Hon. Publications Officer of the R.C.& T. Society, Mr. T. J. Edgington, 57, Heathfield Road, Kings Heath, Birmingham, 14.

La Situazione Attuale delle Metropolitane nel Mondo (The Situation Today on the World's Metropolitan Type Railways). By Giorgio Meregalli. Milan: Istituto dei Trasporti del Politecnico. 11½ in. × 8 in. 76 pp. Illustrated. No price stated.—The author has contrived to bring together much information on mileages, electrical characteristics, civil engineering, signalling, rolling stock and equipment, density of services, and traffic conveyed. All this is listed in some 40 tables and supplemented by graphs, maps, outline drawings, and diagrams, but no photographs. Where it has been difficult or impossible for him to ascertain precise details, this fact is specially indicated. There is an extensive bibliography.

The Great Northern Railway. By O. S. Nock. Hampton Court, Surrey: Ian Allan Limited, Craven House. 8½ in. × 6¼ in. 192 pp. Illustrated. Price 30s.—By coincidence, reintroduction by British Railways, Eastern Region, of the name "Great Northern Line" is followed closely by this volume. In the sphere of mechanical engineering Mr. Nock writes with a sure touch. Some official details of the Pacific locomotive trials of 1923 are published for the first time. There are also hitherto unpublished details concerning the origin of the somersault signal. A minor error is the confusion between the two Cubitt families: Lewis Cubitt, the architect of Kings Cross Station, was not related to Joseph, the G.N.R. engineer.

The British Steel Industry, 1958.—This 64-page publication has been produced by the British Iron & Steel Federation, Steel House, Tothill Street, London, S.W.1, from which it may be obtained free of charge. The text is concerned with materials, capacity markets, prices and finances, the economy and the future of the industry. The illustrations are well reproduced, some in colour; they depict the basic processes of steel making, and examples of finished products of the industry.

Seventeenth International Railway Congress

Financing and Conserving Railway Properties and Assets

Financial methods used in the renewal of installations and rolling stock

THE subject of Question 8 to be considered by the International Railway Congress in Madrid in September is a comparative study of the financial means used for the normal renewal of permanent installations, and rolling stock. Mr. W. Keller, Chief of the Finance & Accounts Section, Swiss Federal Railways, has compiled the report on practice in European countries and in certain oversea territories which in general follow European methods.

The replies show that as between one country to another the law and economic conditions differ widely, as also do the methods of accounting. The reporter, therefore, has mentioned only those administrations with which he had discussions, and offers his apologies to other railways which replied to the questionnaire; but he has been able to verify that these administrations have resolved the problem in a similar way.

The statements of the following administrations were taken into consideration: German Federal, French National, Italian State, Belgian National, Netherlands, and Swiss Federal.

Conservation of Assets

Any undertaking which produces goods or provides services needs equipment or tools such as machinery, buildings, vehicles, and so on. To survive, the undertaking must constantly conserve the substance of its productive equipment. The investor supplying the funds expects that the money invested will produce revenue and that it can one day be recovered at least at par. If only for this reason, the undertaking must conserve the substance of the investment, which is the counterpart of the capital investment.

The financial arrangements, accounts, and cost calculations cover the depreciation by amortisation funds. The calculation of the first cost allows the fixing of the selling price which covers the costs. At the end of the year, comparing the charges and incomes from production, it can be seen whether the costs have been covered. The allocation to reserve for this prevents the amount of depreciation being shown as a dividend for distribution.

When the purchasing power of money falls, redemption at the purchase value allows the undertaking to repay the nominal capital when the equipment becomes unserviceable; but it does not allow for its replacement. The nominal capital, but not its substance, has been conserved. What is important, however, is not the repayment of the capital but the replacement of the assets.

The amount of redemption calculated at the prevailing values does not correspond to the true replacement value. When the purchasing power of money falls, it becomes theoretically impossible to recover the investment. In practice, however, redemption calculated on current values will generally suffice.

Renewal and maintenance of railway property represent 24 to 43 per cent of the total charges of the undertakings. Excessive or inadequate amortisation has wide financial repercussions.

Permanent Way

Fixed installations have, in general, a very long useful life. In permanent way, for example, renewals are often carried out piecemeal, as needed, whilst other equipment, the body of the track and tunnels particularly, are practically never renewed. Depreciation is, therefore, less obvious and is difficult to compute. Monetary depreciation, too, makes itself felt particularly with very long lived assets.

Accounting Methods

Only two administrations, the Netherlands Railways, and the Swiss Federal Railways, use the standard method of amortisation. The other four of the six considered by Mr. Keller use the fixed value method of accounting.

According to this method, instead of the calculated amortisation costs, the actual renewal costs are charged currently to the financial returns. In the balance sheet, the cost of initial provision remains fixed so long as there is no essential change in the assets.

The effective renewal costs charged to the financial returns correspond to amortisation charges on present values provided the equipment is renewed each year to the same extent as it depreciates. If, for example, an administration has 25 locomotives, the average useful life of which is 25 years and the actual age of them scaled from one to 25 years, it should replace one locomotive each year. The financial returns would be charged with a like amount whether it is charged each year with one twenty-fifth of the current value of all locomotives under the amortisation or if they carry each year the effective cost of purchasing one new locomotive as a renewal charge.

The problem of deciding if depreciation of equipment should be assessed on the prime cost or on the current cost does not arise with the fixed value method; evaluation is necessarily on current values.

It seems that the general method with most railways is for the annual renewal requirements to correspond to the annual reduction in value. Between the old and the new equipment is established a kind of balance in which the average age corresponds roughly to half the useful life of all the equipment. As in the case of the 25 locomotives, the depreciation corresponds to the annual need for renewal.

Often, however, because of their poor financial position, the railways cannot undertake the necessary renewals. Consequently, if the financial returns were charged only with the actual cost of renewals made, they would in fact carry an incomplete charge. Therefore, certain administrations replace the actual expense by a theoretical charge. These theoretical charges for renewal are calculated in principle in the same way as amortisation on current value.

Replacement Costs

Although most railways prefer the fixed value method rather than amortisation, Mr. Keller does not believe that this is because the method is more simple. The difficulties, he states, are the same with both methods when it is a case of determining the theoretical replacement costs.

This theoretical replacement value is the basis of calculation for amortisation on current value. With the fixed value method, however, it serves to distinguish between the costs of renewal to be charged to the financial accounts or to the sinking funds, and the costs of an increase in assets. The fixed value method seems more complex in that this delimitation must be done in each case, whilst with the amortisation system, it is enough to make one annual calculation for each group of assets.

The fixed value method has the advantage of automatically introducing the principle of current value, whilst the same principle is partly avoided in the amortisation method. The application of the fixed method varies from one administration to another.

Western Germany

The German Federal Railway charges the operating costs account not with the actual renewal charges, but with renewals which should have been carried out under the programme. These charges are calculated on the average useful life of different groups of assets and on the replacement cost. They therefore correspond to amortisation at current value.

Current values are calculated by means of a price index. The balance sheet values were re-assessed in 1949, at the time of the currency reform, and only price changes since then are taken into account.

The theoretical renewal charge is written with the operating costs and credited to a corrective account on the debtor side of the balance sheet. The same account is charged with actual renewal costs. When a renewal in-

creases the productive capacity, the portion relating to increased equipment or capacity is charged to capital. When steam locomotives, for example, are replaced by diesel or electric powered vehicles, the capital investment is increased only if and to the extent the new vehicles increase the capacity of the system. Strengthening of the track in renewal, for example, by laying heavier rails or using more sleepers, is not considered to be an increase in assets.

S.N.C.F. Practice

The French National Railways take the annual maintenance and renewal costs of fixed equipment as equivalent to depreciation. Theoretical renewal charges are not formulated. The operating costs are, therefore, made to carry the actual costs of maintenance or renewal. All work is considered as renewal or maintenance, except new work which increases physical assets or productivity. However, 20 per cent is deducted from the cost of new work representing the portion of maintenance and renewal work which is generally included. This deduction is charged to operating costs as are the costs of all new works below 5,000,000 francs and all welfare work.

The statutes of the Italian State Railways prescribe annual allocations for renewal of vehicles and track steelwork; these allocations are charged to the operating costs. For the other parts of the permanent way and all other classes of fixed equipment as well as furniture and machinery, the operating results are charged with the actual cost of renewal.

The annual allocation for renewal of vehicles is fixed at a minimum of 2·5 per cent of the traffic receipts. Very often, when the need for renewal demands and the budget allows, the allocation has been increased.

The cost of like-for-like replacement of equipment is considered as renewal expenses. However, for certain important fixed equipment and complete vehicles, the costs of replacement are taken as an increased capital investment whilst the value of rolling stock withdrawn is taken out of capital. The principle of fixed book value is, however, not followed completely.

S.N.C.B. Renewal Fund

The Belgian National Railways have a renewal fund. Annual allocations are calculated on the useful life and replacement cost. Deficits in recent years, however, have caused these to be at a lower figure than the allocation needed theoretically. The actual payments for 1956, for example, were only 1,020 million belgian francs, instead of 1,850 million francs. The actual cost of renewal is covered by the renewal fund. Renewal is considered as like-for-like replacement.

Two administrations, the Netherlands Railways and the Swiss Federal Railways, have adopted the amortisation method; they use different methods of calculation.

The Netherlands Railways redeem on the basis of current value. However, for the body of the permanent way, it applies the amortisation on the prime cost of purchase. The current value is obtained by price index. In practice, the amortisation is first calculated on the purchase price shown in the balance sheet; then, according to the price index, an extra one is added to the amount obtained. The extra amount is allocated to the credit of an internal renewal fund. In the published accounts, the basic sinking fund charge and the supplementary price index addition are shown as a single sum, under the heading of amortisation.

The Swiss Federal Railways, in principle, redeem capital assets on the purchase price. For track equipment and vehicles, there is a supplementary redemption, which for track equipment is calculated on the difference between the purchase price and the current value; for vehicles, only a part of the difference is used. For vehicles, however, the supplementary redemption is only made if it does not entail a deficit.

Both administrations book renewal charges according to the rules covering the amortisation method, that is these costs are added to capital investment and consequently included in the normal redemption funds. There is, therefore, no distinction between renewal and new investment as is the case of the fixed value method. They do not add to the capital either the costs of continuing operation during the work, or the costs of adaptation and maintenance of existing equipment carried out concurrently with construction, or any other expenses considered as non-capital cost. The Netherlands Railways add these costs to amortisation whilst the Swiss Federal Railways include them in maintenance.

Accountancy Charges

In showing the amounts expended by the railways in conserving their assets, it is necessary to distinguish between the accountancy charges and the actual costs. The accountancy charges include the amounts charged to the working results, under capital redemption, for actual or theoretical renewal.

As percentages of total charges and traffic receipts, the accounting charges for maintenance of assets are as follows:

	Total charges, per cent	Traffic receipts, per cent
German Federal	39·2	44·0
French National	39·7	55·5
Italian State	32·8	45·3
Belgian National	23·5	26·5
Netherlands	43·0	42·9
Swiss Federal	35·4	36·7

The comparative value of these figures is reduced by the fact that political charges included in the total charges vary from one administration to another. These charges include abnormally high pensions, employment of supernumerary staff and so on.

To judge the charges to be made for maintenance of assets, Mr. Keller maintains that the value of the invested capital is the most appropriate standard for comparison. The balance sheet value must be disregarded, because it differs according to the accounting method used. Only the current replacement value can be taken into consideration, even though it may only be a summary estimation.

Capital Increases

Most railways consider that in future the need for capital will increase because they will have to develop their equipment to meet the requirements of modern traffic and technical progress. They have compiled five- and 10-year programmes which forecast, for renewal and extension, an annual expenditure of up to 5 per cent of the replacement value. They do not yet know, however, how they will be financed. In any case, they will have to finance the development of installations beyond simple renewal by outside capital unless the State intervenes. Generally, one must expect to see the proportion of outside capital increase and on the same basis, the capital costs also.

Because of the constant depreciation of money which has been experienced to a varying degree by all countries, the reporter believes that the problem of conserving assets is more vital than the simple conservation of nominal capital. For undertakings with a heavy capital investment, such as railways, the problem is of particular importance.

The classical form of redemption, by which the original cost is spread over the useful life of the equipment, becomes inadequate when money loses its value.

To retain the substance, which is essential for the existence of an undertaking, it is necessary to adjust sinking funds to the current value of the fixed assets.

The two methods, fixed value and amortisation, can be considered as identical in their effects. Both permit the real depreciation of equipment to be taken into account.

Mr. Keller, however, sees an advantage in the amortisation method. It is simpler and above all can be understood by non-specialists because it conforms to general commercial practice.

ELECTRONIC DATA PROCESSING FOR L.T.E.—Like other large undertakings, the London Transport Executive is considering the application of electronic data processing (E.D.P.) techniques to the administrative work of the organisation. A small committee of senior officers has been set up to advise the Executive on the matter. Last year, an E.D.P. Unit was formed and has lately been strengthened. The functions of the unit are to acquire specialised knowledge of E.D.P., to place that knowledge at the disposal of the committee of senior officers and any study groups that may be set up to examine particular projects, and to secure effective liaison between the Executive and the manufacturers of E.D.P. equipment. The application of E.D.P. techniques to railway administrative work was the subject of an article in last week's issue.

New Marshalling Yard at Margam, Western Region

Facilities to serve increased steel production in South Wales

View westward, showing preliminary work: diverted course of River Kenfig with main line on extreme right, and (on left) levelling in progress

CONSTRUCTION is now proceeding of the new marshalling yard, planned by the Western Region of British Railways, adjacent to the South Wales main line between Pyle and Port Talbot.

Discussions with the former Great Western Railway regarding facilities required for the development of the large strip mill project at Port Talbot, started in 1944; these resulted in a comprehensive layout plan of running lines and sidings designed to serve the scheme as then envisaged. The work was put in hand in 1947, and completed in 1949. It was described in our issue of June 22, 1951.

The Steel Company of Wales Limited, however, continued to develop its works to keep in step with its cold reduction plants at Trostre and Velindre, both of which are in full production; and in the light of increasing rail traffic at Port Talbot, Llanelly, and other points in South Wales, the scheme for construction of the new yard was prepared.

The yard covers an area of 178 acres. It follows the usual pattern of such layouts, and when completed will embody the layout equipment for dealing with traffic.

Its main features are:— (1) 12 reception sidings with up and down running lines on either side and centre hump loco return road; (2) hump and control tower; (3) sorting sidings, 48 in number, with two primary and eight secondary retarders; (4) storage sidings (already constructed); (5) lines leading to Steel Company of Wales works; (6) independent line for up coal empties traffic from the Steel Company of Wales plant; and (7) provision for a motive power depot at a later stage; also the doubling of the Ogmore Valley extension line from Margam Moors to Newlands signalbox, and other associated works.

The longest siding in the sorting group will be about 700 yd. and a large proportion of the sidings in this group are to serve the Steel Company of Wales traffic.

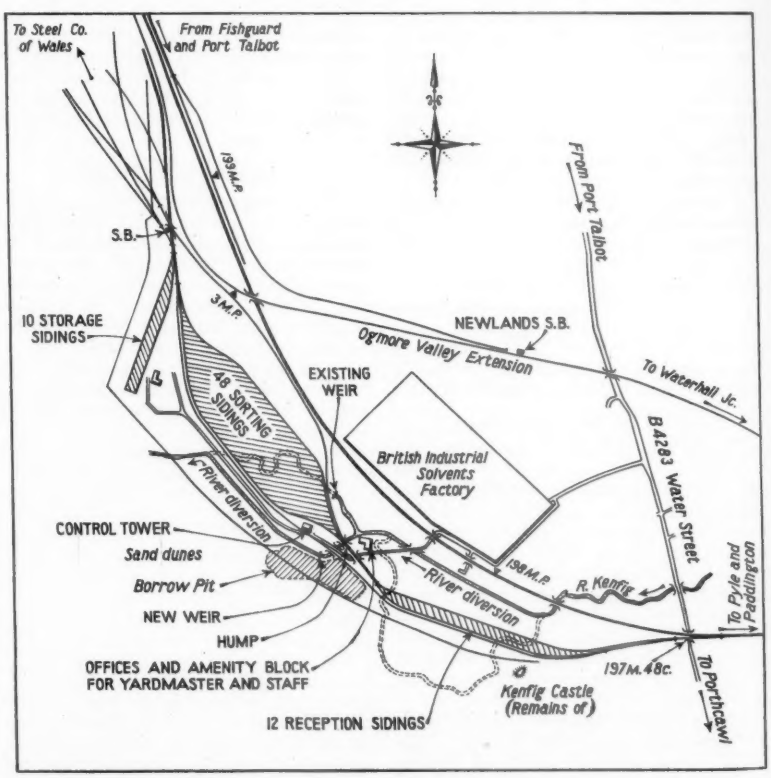
Automatic Working

The whole of the traffic passing over the hump and through the sorting sidings will be regulated through the medium of the control tower; this, with the working of retarders, will be fully automatic. Except for junctions, diamonds, compounds, and insulated joints and so on, the rail joints will be welded throughout by the thermit process.

An amenity block for the accommodation of the yardmaster and his staff will be provided near the hump with road access from Water Street and a road communication will be provided thence to the control tower and beyond. Another three amenity blocks will be distributed throughout the layout. Side slopes will be soiled and sown with grass seed; soil already has been set aside for this purpose. Besides the control tower there will be a signalbox located at the outlet of the sorting sidings.

Weir for Impounding River

The River Kenfig traverses the site of the layout and the river water is impounded in the upper reach by a weir which affords a supply of water by pumping for the Steel Company of Wales, Limited. The displacement of this weir and the provision of a new one on another site is at present in the design stage, and it will be necessary in this connection to bring into use



Layout of new marshalling yard, showing river diversion and relation to South Wales main line

a temporary weir. The river amenities for the requirements of migratory fish which exist in small quantities have engaged the attention of British Railways and the River Board, and it is hoped that a solution has been found.

The possibility of blown sand invading the area has not been overlooked and this will be dealt with by the planting of suitable grasses to arrest the travel of sand towards the railway.

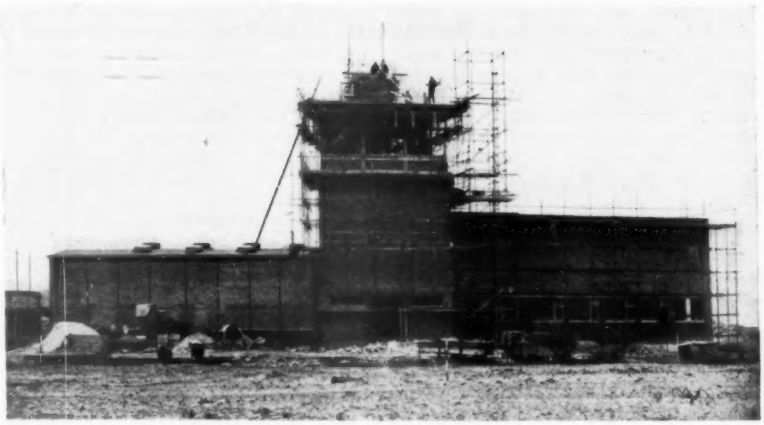
Stacking Ground for P.W. Material

The whole of the permanent way, plain line fittings, timbers, and other components is being supplied by British Railways and in the first instance it was necessary to provide a suitable stacking ground for the reception and distribution of this material, some of which is new and some serviceable material recovered from relaying. A preliminary contract in this connection was entered into in May, and completed in August, 1957; it made provision for the stacking of plain line, fittings, and other items, much of the plain line will be in 60-ft. pre-assembled lengths.

The main contract which was entered into in June 1957, provided for the diversion of the River Kenfig, earthworks, including the formation of the large borrow pit, fencing and footpaths, permanent way, a new underline bridge at Water Street at the Paddington end, a flyover bridge at the outlet of the sorting sidings, small bridges associated with the river diversion, a road bridge and culvert under the hump, cattle pens, drainage, and so on.

Stabilising Sand Against Drift

The full extent of the site from Water Street, where the Reception Sidings make contact with the South Wales main line, to Margam Moors is largely blown sand, and over some areas there is a covering of rough grass and vegetation, but towards the sea and within the contract area there are extensive sand dunes, and the question of stabilising against wind drift will engage the attention of all concerned as the work proceeds.



Control tower as seen from sidings

Up to the present date the contractor's operations have been confined mainly to the moving of sand in large quantities. As stated, the scheme includes the formation of a large borrow pit as otherwise the earthwork quantities would be out of balance.

The main earthwork quantities are as under:—

	cu. yd.
Bulk excavation in levelling site ..	260,000
,, ,, in borrow pit.. ..	268,000
,, ,, and lead to up embankment.. ..	25,000

The earth moving machinery on site consists of seven diesel tractors; seven scrapers of 20 cu. yd. capacity; and a dragline, also other maintenance units.

At the present the earthwork is about 60 per cent completed and progress has been rapid.

One of the main determining features in completing the contract within the contract period, will be dependent upon the flow of bottom and top ballast, the laying in of plain line and fittings and the subsequent welding of rail joints. This will be a prerequisite to the installation of the electrical and other equipment in the control tower and the completion of retarders, cable ducts, cable leads, and other services.

The permanent way comprises about 60,000 linear yd. of plain line, 170 single connections, five diamonds, three single and ten double compounds. The whole of the plain line, fittings and ballast will be delivered on site by British Railways, who will also supply all the pre-stressed concrete units to be manufactured at the Taunton Concrete Depot. Pre-stressed piles will be supplied by the contractor.

The reception and sorting sidings will be laid wholly on the straight. The following are some particulars:—

14 reception sidings, maximum length 2,485 ft. minimum 1,630 ft.
48 sorting sidings, maximum length 2,180 ft., minimum length 935 ft.
Gradient approaching hump summit 1 in 50.
,, leading to sorting sidings 1 in 80.
,, through sorting sidings 1 in 80/500/level.

Parliamentary powers for the acquisition of the land were obtained in 1956.

Control Panel

The handling of the wagons into the reception sidings and through to the sorting sidings will be controlled entirely from the control tower. A single control panel will be provided for the operating of the signals into and out of the reception sidings and also for the manual control of the retarders and points leading to the sorting sidings. The control panel will consist of a diagram of the track layout.

The right-hand end will provide control for the signalling in the reception sidings on the route system in which the operator will turn a signal switch and push a button at the end of the route required in order to set the points and clear the appropriate signal. The left-hand panel will provide an overriding manual control for the points in the approach to the sorting sidings and for the retarders.

While the train is standing in the reception siding, information concerning the sidings to which the wagons should be humped will be obtained by the shunter walking along the train. This

Stacking yard for permanent way material, showing sandy terrain

information will thereupon be transmitted to the control tower and will then be transferred to a punched paper tape. When the train is to be humped the punched tape will be fed into a reader. The latter will supply information to the control system so that the wagons are routed to their correct sidings as the train is pushed over the hump.

Retarders

Control of the retarders will be entirely automatic. The correct release speed will be collected by a computer taking into account the running resistance of the wagon, distance it has to run in the siding and the curvature of the track, and the correct pressure will be applied to the retarder by means of a servo system which will take into account the required leaving speed and the weight of the wagon. The operator will be able, however, to override any part of the automatic system if this proves necessary. In the case of the points a separate switch will be provided for each set of points and in the case of the retarders a manual control switch will be provided for each retarder.

The main contractors for signalling system, retarders and automatic control equipment are Metropolitan-Vickers G.R.S. Limited, and the installation is being carried out under the supervision of Mr. A. W. Woodbridge, Signal Engineer, Western Region.

Main contractors for civil engineering work are: Sir Robert McAlpine & Sons (South Wales) Limited (earthwork, permanent way, bridgeworks, drainage and fencing), and John Morgan (Builders) Limited (control tower). The work is being carried out under the supervision of Mr. M. G. R. Smith, Chief Civil Engineer, Western Region, British Railways.

Half-Scale Girder Test Bridge

Model of 200-ft. through-type Warren girder span for research at Northwestern University, U.S.A.

OF the various examples of co-operation in research between industry, Federal agencies, and education in the the U.S.A., one of the most remarkable is the new experimental and analytical bridge testing plant at Northwestern University, Illinois. It is sponsored by the University, the Association of American Railroads, the Corps of Engineers, and the Bureau of Public Roads, and is also materially assisted by many interested business concerns. The University has provided the site for the plant and has subscribed $100,000 towards the structural works involved, as well as contributing $10,000 for initial running expenses. The cost of installation and operation during the first five years is estimated at $450,000. Towards this the A.A.R. and Corps of Engineers are each contributing $10,000 a year and the Bureau of Public Roads $5,000. Materials and services valued at $150,000 are also being provided by 14 steel, bridge, structural and other industrial firms.

The test plant consists essentially of a half-scale model of a 200-ft. through-type Warren girder span with verticals; it is primarily designed as a double-line railway bridge but so planned and fabricated as to be convertible as a road bridge. This 100-ft. (actual) superstructure has trusses 16 ft. deep spaced 16 ft. 3 in. apart between centres, and each consists of eight 12 ft. 6 in. panels. When used as a railway span the cross-girders support four stringers, one under each rail, but as a road bridge five stringers will be used to carry a 6-in. R.C. deck. The test bridge rests indirectly on a heavy R.C. test-bed anchored by 18 4-ft. screw-caissons taken down 72 ft. to rock. The four corner caissons support the bridge in the usual way, but all four corners have roller bearings; the other 14 caissons provide anchor reactions for 14 inverted hydraulic centrally-operated and controlled jacks applying and measuring the test loads. Each caisson is designed to withstand an upward force of 380,000 lb.

Both trusses are designed for the same loading but have members of different geometric designs. For instance, in one truss the top-chord box section has angles turned outwards and latticed bottom flanges, whereas in the other the angles are turned inwards and there are perforated cover-plates along the bottom flanges. The principal members are fabricated in high-strength steel having a minimum yield-point of 50,000 lb. per sq. in.

In particular tests a high-strength member may be replaced by one of low-carbon steel, and the bridge can be loaded until the latter fails. Field-connections are with high-strength bolts, and as the heat of riveting was found to cause distortion in the $\frac{3}{16}$-in. plates and $\frac{1}{4}$-in. angles in various members during shop fabrication, high-strength bolting was used there also.

Special Tests

Besides all the more normal tests, some less-familiar ones are to be made. For example, one is a study of the load-carrying capacity of end-posts of railway or road bridges damaged by moving loads. The intention is to determine the ultimate capacity of these members in compression when distorted to various extents, so as to enable decisions to be made as to whether traffic should be allowed to cross such damaged bridges. Other tests envisaged include those to show the effects (*a*) of eccentric loading of splices and members, (*b*) of vibration on members, and (*c*) of actual field conditions on critical compressive members; also others again showing the part played by the floor system and lateral bracing on chord stresses, the effectiveness of high-strength bolting as compared with riveting, and the strength of members with perforated cover-plates. Many other tests are also expected to be made as problems arise, and capacities of existing bridges will be ascertained by using details and members representative of them.

Every use is also to be made of optical instruments to measure not only the movements of the ends of truss members in three directions and in rotation about any of the three co-ordinate axes, but also changes in shape of members and even in whole bridges.

Use of Measuring Instruments

These precise measurements will be made with instruments mounted on supports having foundations independent of the test-bed foundations. Though free to move at its four corner supports on rollers, the test-bridge is anchored at mid-span by diagonal tie-rods extending through the test-bed to anchors below. Turnbuckles on these rods enable adjustments to be made in the longitudinal position of the bridge to ensure that its centre-line is exactly as required by the optical instrumental system. The whole test layout will be enclosed in a structural steel laboratory building 130 ft. × 34 ft. × 32 ft. high.

Construction and operation are under the general supervision of an advisory committee of nine with Mr. C. H. Sandberg of the Atchison, Topeka & Santa Fe Railway, as chairman, and including another representative of the A.A.R. in Mr. E. J. Ruble. The Project Director is Professor Lawrence T. Wyly, who also designed the test-bridge, assisted by research associates, Messrs. F. H. Cramer and Barry Chamberlain of Great Britain.

ROAD CASUALTIES IN APRIL.—There were 410 deaths on the roads of Great Britain in April, compared with 352 in April, 1957. The number of persons seriously injured was 4,953, and the number slightly injured 15,723, making a total for all casualties of 21,086, an increase of 666. Traffic on main roads is estimated to have been over 16 per cent heavier than in April, 1957. The main increase was in casualties to drivers and passengers of motor vehicles other than motor cycles. The increase was greater in country areas, where there is no speed limit, than in the towns.

Closing of Midland & Great Northern Line

Annual saving of £500,000 estimated from closing 180 miles of self-contained group of lines in Eastern Counties

THE Eastern Area Board of the British Transport Commission has decided in principle to close the lines which until nationalisation in 1948 constituted the Midland & Great Northern Joint Railway. The total length of line is about 180 miles. The area is well served by other lines of the Eastern Region, those of the former Great Eastern Railway, and also by bus routes.

In announcing its decision, the Board points out that in pursuit of its policy of maintaining the widest practical network of railway services in the Eastern Region, considerable experiments have been made by the management in cheaper methods of operation, often combined with improved facilities, and the losses incurred on non-paying sectors of the network have been appreciably reduced. On certain services there are still, however, big losses; and the extent to which these can be financed out of the proceeds of the profitable services has been much limited by recent trends. A new point of balance, it is stated, must be found between the obligations of public service on the one hand, and the requirements of the railway budget on the other.

Traffic

As the map shows, no place served by the M.G.N. Line is more than a few miles distant from lines of the former Great Eastern or Great Northern Railway. After closure of the M.G.N. Line, the longest distance to a station or depot will be 13 miles, usually considerably less. This duplication of facilities is mainly responsible for the poor loadings experienced on the line, apart from the general sparsity of traffic in the area.

The average number of passenger trains affected by the closure is about 140 a day (about 12 on Sundays) carrying an average of 40-50 passengers apiece. An appreciable amount of passenger traffic is conveyed during a few weekends in the peak summer holiday season between the Midlands and the Norfolk coast, mainly to and from Yarmouth. There is an average of some 80 goods trains a day on weekdays, with none on Sundays.

Such traffics as are now carried by the M.G.N. services can be transferred elsewhere with advantage to both the economics and the frequency of the alternative services. The proposed closure will not only eliminate duplication, but also make it possible to improve the remainder of the services; strengthening of these is already under consideration.

It is estimated that net savings of some £500,000 a year will result from the changes contemplated. In addition, certain very heavy expenditure on engineering works, such as the rebuilding of the Clenchwarton Bridge, near South Lynn, will be avoided.

Diesel Passenger Services Considered

As regards passenger traffic, the proposed closing will involve withdrawal of stopping passenger train services; most of these are at present steam-operated and carry very few passengers. Conversion of services to diesel operation has been tried over comparable sections of line where conditions are favourable, with admittedly beneficial results. The reduction in operating costs and the improvement in receipts, however, have not been sufficient to bring the services into financial equilibrium and the field remaining on the M.G.N. offers a still less favourable ground for experiment. There is now sufficient experience of diesel operation to establish that, to make this type of stopping passenger service profitable, there must be a very substantial increase in the carryings.

Such increases of local traffic in the area served by the M.G.N. Line are believed by the management of the Eastern Region not to be available. Many stations are a long way from the villages they serve, and the bus, rather than a railway or tramway, offers the best and most economical means of carrying the bulk of these local and short distance passengers.

Freight Services

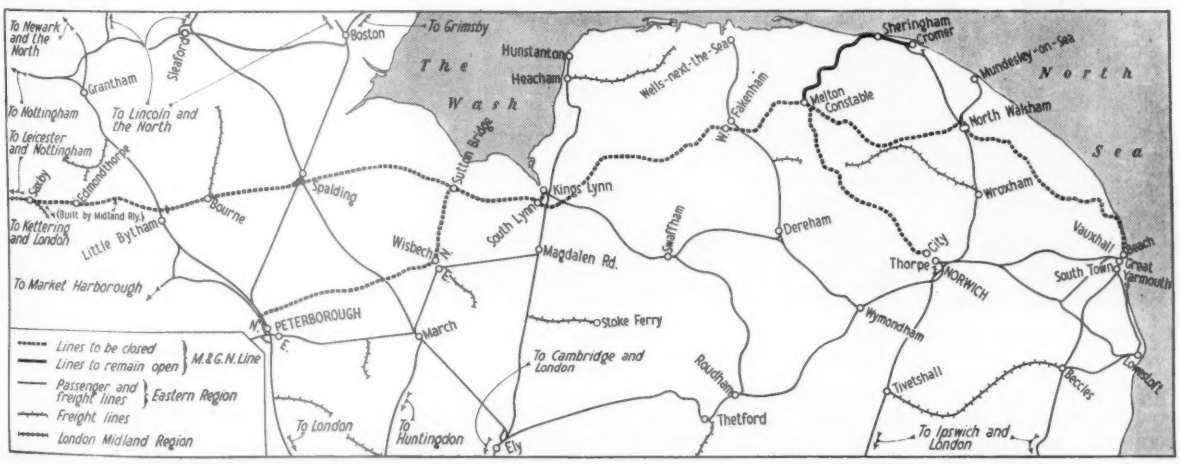
On the freight side, the volume of traffic does not justify maintenance of this line as a separate through route, more particularly as the alternative railway facilities are available for it in most cases; every effort will be made to continue a satisfactory transport service to the traders and other interests in the area.

Staff Affected

About 1,500 men will be affected. The trade unions have been informed, and the arrangements necessary and proper in such circumstances will be discussed with them and settled so that, in accordance with normal practice, serious hardship or dislocation is avoided.

Closure by Stages

It is intended that the closure shall take place by stages. The stages have been provisionally planned as follows; they will not necessarily take place in this order, and special arrangements may be made to retain facilities at certain centres: (1) Yarmouth Beach to



The Midland & Great Northern Line, showing lines to be closed and adjacent lines of British Railways, Eastern Region, affording alternative routes and services

Melton Constable; (2) Norwich City to Melton Constable; (3) Melton Constable to South Lynn; (4) South Lynn to Sutton Bridge; (5) Sutton Bridge to Peterborough; and (6) Sutton Bridge to Edmondthorpe. It is not intended to close the section from Cromer to Melton Constable.

The detailed plans are now being worked out for submission to the appropriate Transport Users' Consultative Committees. As the plans for closure develop and dates for the various stages are made known, the management will notify all persons or bodies known to be interested. The plans may be varied in detail, but it is intended that the first stages of the closure should take effect by the end of 1958 and the remainder follow as soon as possible thereafter.

Origins of M.G.N. Line

The line was conceived and built as a competitive penetration from the Midlands into East Anglia and duplicated facilities in the sparsely populated Fenlands around the Wash and in northern Norfolk. It originated as a number of small independent companies which gradually amalgamated.

By an Act of July 23, 1866, the Midland & Eastern Railway was formed to take over a small, independent line from Bourne to Kings Lynn and exercise running powers to Peterborough. The Midland Railway had already secured the working of the Peterborough, Wisbech, and Sutton Bridge line and the Midland Railway, with the Great Northern Railway, jointly worked the lines between Bourne and Kings Lynn.

A few years later construction of lines commenced in the northern part of Norfolk. They included the Lynn & Fakenham, which was building eastwards from Kings Lynn, reaching Guestwick, four miles east of Melton Constable on what is now the Norwich branch, in January, 1882, and Norwich City in December of that year.

By Act of August 18, 1882, the Lynn & Fakenham, the Yarmouth & North Norfolk Railway and the Yarmouth Union Railway amalgamated to form the Eastern & Midlands Railway which completed the system from Bourne and Peterborough to Norwich and Yarmouth by opening between Melton Constable and North Walsham on April 5, 1885. By the same Act the Midland & Eastern and the Peterborough, Wisbech & Sutton Bridge Railways were merged into the Eastern & Midlands system from July 1, 1883. The branch to Cromer was then undertaken and opened between Melton Constable and Holt on October 1, 1884, and reached Cromer on June 16, 1887.

The connecting link between South Lynn and Bawsey via Gayton Road was opened on January 1, 1886, thus allowing through working without touching King's Lynn, and the old section between Gaywood and Bawsey was abandoned.

No further construction took place until the Midland and Great Northern Railway Joint Committee was incorporated by special Act of June 9, 1893, and took over from July 12, 1893, ownership of the Eastern & Midlands.

In 1893 also when a short line avoiding Spalding was brought into use and at the same time a continuation was made (for goods in 1893 and passenger in 1894) from Bourne to join the Midland Railway at Little Bytham Junction.

The standing of the M. & G.N. Joint Line was unchanged by the Grouping Act of 1921, except that its owning partners, the Great Northern and the Midland Railways became merged into the L.N.E.R. and L.M.S.R. respectively.

Passenger and goods traffic continued to be controlled from Kings Lynn until October, 1936, when the working responsibilities of the line were taken over by the L.N.E.R. and subsequently by the Eastern Region, on nationalisation.

New Spanish Cafeteria Cars

The first of a series of cafeteria cars for the Spanish National Railways was delivered at the beginning of the year

Cafeteria portion of car, showing arrangement of seats, ample standing space, and lighting

THE first of five cafeteria cars being built in Saragossa for the Spanish National Railways was inspected recently at the Principe Pio terminus in Madrid, by the Minister of Public Works, the President and Chief Officers of the R.E.N.F.E., and officials of the International Sleeping Car Company. These vehicles, intended for the Madrid-Malaga, Madrid-Corunna, and Bilbao-Barcelona services, are generally similar to the present all-steel first class coaches, and approximately 64 ft. long. The cafeteria occupies about 290 sq. ft., the remainder of the coach comprises a corridor and three 6-seat compartments with reclining chairs. The whole is laid out to provide maximum comfort with tasteful decoration, the colour scheme conforming to the best practice for accommodation of this type. The bar counter has 10 seats, which are normally arranged against its face to increase circulating room. Twelve more seats are available in settee form at four tables, one of which is against large windows affording an excellent view. With all seats occupied there remains space for some 18 persons to use the bar standing in comfort.

Catering Equipment

The kitchen, scullery, and cold store are equipped along modern lines. Fittings include coffee machine, mill, mixer, hotplate, and ovens. Adequate cupboards are provided, with accommodation for staff clothing and personal belongings. The coffee machine and hotplate are heated by butane gas. The rest of the equipment is fed from accumulators. A 36-gal. thermo-siphon provides hot water and can be replenished on the journey from the main 77-gal. tank.

The prototype vehicle already has created an excellent impression and it is expected that these cafeteria cars will prove popular.

RAILWAY NEWS SECTION

PERSONAL

Sir Wavell Wakefield has been elected President, Industrial Transport Association, for the ensuing year. The Vice Presidents will be Messrs. J. J. Brown, W. G. Gee, L. H. Hopkins, C. E. Jordan, T. V. Redston, F. H. Wells, W. G. Widnall. The Chairman will be Mr. A. L. Bagley, and the Vice-Chairmen Messrs. C. A. Elliott and G. L. Eades.

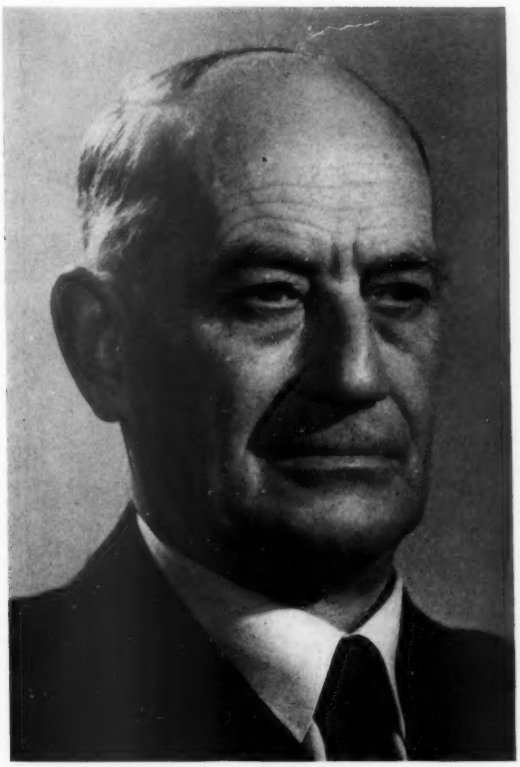
Mr. Reginald William Taylor, C.M.G., B.Sc.(Eng.), A.M.I.C.E., Engineer-in-Chief, Crown Agents for Overseas Governments & Administrations, who receives a Knighthood in the Queen's Birthday Honours, was born at Dunkerque, France, in 1895. He was educated at St. Lawrence College, Ramsgate, and University College, London, Mr. Taylor was appointed an assistant engineer in the Public Works Department, Uganda, in 1920, bcoming a senior assistant engineer in 1929. and an executive engineer the following year. In 1938 he was transferred to Nigeria as Senior Executive Engineer, and in 1945, was appointed Deputy Director of Public Works Nigeria, becoming Director in 1947. In 1951 he became Director of Public Works in Kenya. He took up his present appointment as Engineer-in-Chief with the Crown Agents in July, 1954. Mr. Taylor is also Engineering Adviser to the Secretary of State for the Colonies.

Mr. C. G. Harrison is retiring as General Manager, Malayan Railways. Other retirements announced by the Malayan Railways are those of Mr. A. J. Ball, Chief Mechanical Engineer; Mr. J. E. A. Foreman, Traffic Manager.

Mr. F. Gibbons, Assistant District Engineer, Gloucester, Western Region, British Railways, has been appointed District Engineer, Oswestry.

Sir Philip Warter

Who has been appointed Part-time Member, British Transport Commission



Mr. R. W. Taylor

Engineer-in-Chief, Crown Agents, Who receives a Knighthood

Sir Philip Warter, who, as recorded in our May 23 issue, has been appointed a part-time member of the British Transport Commission, has been Chairman of the Southern Area Board of the British Transport Commission since 1955. He was Director of Warehousing in the Ministry of Food in 1940, Controller-General, Factory & Storage Premises, Board of Trade, 1941-45, and Adviser to the Board of Trade on Industrial Estates, 1945-46. He received a knighthood in January, 1944. Sir Philip Warter is Chairman of Associated British Picture Corporation Limited, Enfield Cables Limited, and Union Cinemas Limited. He is a Director of the British & Foreign Wharf Co. Ltd.

In consequence of the appointment of Mr. W. D. Opher, as Managing Director of Vickers-Armstrongs (Engineers) Limited, he will relinquish his office of General Manager of the Barrow Works of that company. Mr. A. Storey has been appointed an additional member of the board of Vickers-Armstrongs (Engineers) Limited, and becomes General Manager, Barrow Works.

Mr. H. J. Shailes has been appointed Acting Chairman of the Penang Port Commission.

Mr. Peter H. Jackson has been appointed Home Sales Manager, Lancashire Dynamo Group.

The following retirements and appointments are announced by the Malayan Railways :—

Retirements

Mr. G. S. Hunt, Personnel Officer, Mechanical Engineering Department.

Mr. C. R. Kinge, Assistant Personnel Officer.

Mr. S. C. Sinnathuray, Financial Officer.

Appointments

Dr. A. J. Leslie-Spinks as Chief Medical & Health Officer.

Mr. R. G. Fleeton as Secretary, Malayan Railway Administration.

Mr. E. Jefferies as Port Manager, Port Swettenham.

Mr. Prethm Singh as Assistant Stores Superintendent.

Mr. C. A. C. Kelaart as Chief Locomotive Inspector.

Mr. K. Nagalingam as Assistant Traffic Superintendent.

Mr. F. A. A. Menzler, who was Chief Development & Research Officer, London Transport Executive, from 1945 to 1954, has been elected Chairman of Throgmorton Management Limited.

Mr. Sydney George Hearn, O.B.E., M.Inst.T., Assistant General Manager (Traffic), Eastern Region, British Railways, who, as recorded in our last week's issue, has been awarded a C.V.O. in the Queen's Birthday Honours, joined the Great Western Railway in the Plymouth Division in 1911. After four years of service with

Mr. S. G. Hearn

Assistant General Manager (Traffic), Eastern Region, receives the C.V.O.

Mr. W. A. Woodbridge

Signal Engineer, Western Region, Awarded an O.B.E.

H.M. Forces during the 1914-18 war, he was nominated, in 1921, for special training, being the first Traffic Department candidate so selected. He gained further experience in the Goods, Traffic, Locomotive Running, Signal, and South Wales Docks departments, following which he was engaged on special duties in the offices of the General Manager and Superintendent of the Line. He was appointed as junior assistant to the Divisional Superintendent, Newport, in 1930; Chief Clerk to the Divisional Superintendent, Worcester in 1933; Assistant Divisional Superintendent, Newport, in 1936; Divisional Superintendent, Gloucester, in 1939; Assistant to the Superintendent of the Line in 1940, Operating Assistant in 1941, and Principal Assistant in 1945. In 1946 he became Assistant Superintendent of the Line, which position was re-designated Assistant Operating Superintendent, Western Region, in October, 1948. In May, 1951, he was appointed to the London Midland Region as Operating Superintendent, and, at the special request of the British Transport Commission, returned to the Western Region as Chief Operating Superintendent in January, 1956. Mr. Hearn was made a member of the Council of the Institute of Transport in 1945 and was a member of the Committee of the Metropolitan Section of the Institute from 1953 until 1956 when he was elected Vice-Chairman of the Metropolitan Section. In the New Year's Honours List of January, 1948, he was appointed an Officer of the Order of the British Empire. In 1950 he was selected by the Railway Executive to visit the U.S.A. as Operating Member of a party studying railway working conditions under the auspices of the Organisation for European Economic Co-Operation. He has also been a member of Operating Study Groups selected to visit France. Mr. Hearn is a Lieutenant-Colonel in the Engineering & Railway Staff Corps, R.E. (T.A.). He became Assistant General Manager (Traffic), Eastern Region, on January 1 this year.

Mr. A. W. Woodbridge, Signal Engineer, Western Region, British Railways, who, as recorded in our June 13 issue, has been awarded an O.B.E. in Queen's Birthday Honours, received his technical education at the City & Guilds Engineering College. In 1925 Mr. Woodbridge graduated as B.Sc. in Engineering at London University and subsequently obtained his Masters degree. He joined the Great Western Railway Company in 1926, as a pupil in the Signal & Telegraph Department. He was appointed Inspector three years later, and became an assistant in 1935. He was made Assistant to the Signal & Telegraph Engineer in 1941, and appointed Signal & Telegraph Engineer in 1947. Mr. Woodbridge is an Associate of the City & Guilds Institute, and an Associate Member of the Institution of Electrical Engineers. He is also past President of the Institution of Railway Signal Engineers.

Mr. A. Cibula and Mr. R. Eborall have been appointed Research Superintendents of the British Non-Ferrous Metals Research Association. The appointments will fill the vacancy arising from the resignation, at the end of July, of the Research Manager of the Association, Dr. W. A. Baker, Dr. Baker is leaving to join the Northern Aluminium Co. Ltd.

The London Midland Region of British Railways announces the following appointments:—

Mr. G. Latham as Assistant (Freight Services), Operating Officer's Office, Euston.

Mr. G. H. Murrell as Public Relations Officer, Divisional Traffic Manager's Office, London.

Mr. D. R. Barnacle as Assistant Line Traffic Officer, Motive Power, Crewe.

Mr. P. C. Cooper as Assistant Line Traffic Officer, Motive Power, Derby.

Mr. E. D. Bailey as Assistant District Passenger Manager, London (Euston).

Mr. K. N. Sidebotham as Assistant District Passenger Manager, Manchester.

THE INSTITUTE OF TRANSPORT
NORTHERN IRELAND SECTION

The following Officers and Committee Members have been elected to the Northern Ireland Section of the Institute of Transport.

Chairman
Mr. F. W. P. Hampton, General Manager & Secretary, Belfast Harbour Commissioners.

Vice-Chairman
Mr. Robert Flack, Northern Ireland Transport Tribunal.

Honorary Treasurer
Mr. B. Smith.

Honorary Auditors
Mr. F. W. Devitt and Mr. W. C. Wilson.

Honorary Librarian
Mr. H. C. Dobbin.

Honorary Secretary
Mr. R. L. Streight

Assistant Honorary Secretary
Mr. J. J. Woodrow

Committee
Messrs. R. W. Adams, T. B. Andison, J. C. Bailie, R. W. Berkeley, W. E. Brown, R. L. Carter, H. J. Dowling, J. P. Houston, G. B. Howden, R. T. Lockyer, J. Mackle, G. S. Madden, D. P. Neill, L. J. Taylor, W. C. Wilson.

Co-opted Members
Mr. G. I. Bennett and Mr. W. J. Topley.

In connection with the formation of an electronic data processing unit, referred to elsewhere in this issue, on the London Transport Executive, the following appointments are announced:—(*a*) Mr. C. J. Cornwall, Staff Administration Officer, has assumed responsibility for the E.D.P. Unit in addition to his existing duties (subject to (*c*) below); (*b*) Mr. G. O. Gallop has been transferred from the Establishment Office to the E.D.P. Unit and promoted to Principal Executive Assistant; (*c*) responsibility for the provision of advice to the staff on personal problems and for the management of the personal visiting services for the staff has been transferred from the Staff Administration Officer to Mr. K. R. Thomas, Staff & Welfare Officer, as an addition to his existing duties.

Mr. W. H. Geere, Assistant General Manager, Devon General Omnibus & Touring Co. Ltd., has been elected Chairman, South-Western Section, Institute of Transport. The Vice-Chairmen are:—Mr. J. L. Crook, Traffic Manager, Devon General Omnibus & Touring Co. Ltd., Mr. T. L. C. Strange, General Manager of that company, and Mr. T. H. Smart, of Plymouth City Transport.

We regret to record the death on June 8, at the age of 75, of Mr. Alistair D. Solan, former Chief Engineer, English Electric Co. Ltd.

Mr. John O. Sewell has been appointed Assistant General Manager, The Yale & Towne Manufacturing Company. In addition to his duties as Assistant General Manager, British Lock & Hardware Division and British Materials Handling Division, he will also retain his title of Comptroller.

Sir Archibald Forbes has been elected to the boards of the Dunlop Rubber Co. Ltd. and the English Electric Co. Ltd.

Mr. N. L. J. Mould, Works Manager, Dunlop South Africa Limited, has been appointed Works Director of that company.

Birthday Honours List

We regret that in the list of Birthday Honours, published in last week's issue, we listed Mr. P. F. D. Tennant under O.B.E. Mr. Tennant was in fact awarded the C.M.G.

The following is a further selection of Birthday Honours of transport and industrial interest:—

Knights Bachelor

Mr. R. W. Taylor, Engineer-in-Chief, Office of the Crown Agents for Oversea Governments & Administrations, and Engineering Adviser to the Secretary of State for the Colonies.

Mr. W. H. Garrett, member National Joint Advisory Council,.

O.B.E.

Mr. L. M. Simpson, Chief Engineer & Manager, Telegraph Division, Automatic Telephone & Electric Co. Ltd.

Lt.-Commander P. L. Salisbury Baxendale, Port Officer, Aden Port Trust.

Mr. R. B. Lewis, Director of Engineering, Commonwealth Department of Works.

Mr. W. L. Howell, Secretary, Welsh Tourist Board.

Mr. P. A. D. Jones, Principal Information Officer, Export Credits Guarantee Department.

Mr. G. Murray, Production Control Department, Engineering Group, Remploy Limited.

Mr. R. P. M. Wright, Engineer Manager, Harland & Wolff Limited.

M.B.E.

Mr. J. V. Martins, Chief Civil Engineer, Transport & Harbours Department, British Guiana.

Mr. F. C. Ferris, Estate & Works Engineer, General Electric Co. Ltd.

Mr. H. Finch, Signals Officer, Ministry of Transport & Civil Aviation.

Mr. T. F. Hill, Assistant Works Manager, Fluidrive Engineering Co. Ltd.

Mr. J. Jones, Assistant Melting Shop Manager, Steel Company of Wales.

Mr. R. W. Mills, Higher Executive Officer, Ministry of Transport & Civil Aviation.

Mr. W. E. Sutton, Public Relations Officer, Mersey Docks & Harbour Board.

Mr. W. H. Hodgetts, Production Manager, Copper Products Group, I.C.I. Limited.

Mr. E. G. Kirby, Senior Signals Officer, Ministry of Transport & Civil Aviation.

Mr. W. Low, Executive Officer, Ministry of Transport & Civil Aviation.

Mr. R. W. Mills, Higher Executive Officer, Ministry of Transport & Civil Aviation.

Mr. D. C. Pittman, of Penhurst, New South Wales, for services to the road transport industry.

Mr. B. Morrish, Executive Officer, Ministry of Transport & Civil Aviation.

Mr. H. L. H. Stevens, Senior Executive Officer, Exports Credits Guarantee Department.

Mr. H. P. Missen, Travel Officer, U.K. Mission to the United Nations, New York.

B.E.M.

Mr. A. Singh, Electrical Inspector, East African Railways & Harbours Administration.

Mr. W. G. Elliott, Foreman-in-Charge, Cranes, the Workington Iron & Steel Co. Ltd.

Mr. E. F. Foreman, Research Laboratories, General Electric Co. Ltd.

Mr. F. W. Marks, Senior Foreman, Hadfields Limited.

Mr. C. I. Murray, Apprentice Instructor, I.C.I. Limited.

Mr. G. P. Williams, Hon. Collector, Standard Telephones & Cables Limited.

Q.P.M.

Mr. P. L. Smith, Chief of Police, London Transport Executive Police.

Baronet

Lt.-Col. Sir J. A. Dunnington-Jefferson, Director of Derwent Valley Light Railway Co.

Knight Bachelor

Mr. W. A. Edmenson, Member of Board British European Airways Corporation, also Member, Ulster Transport Authority.

C.B.E.

Mr. L. A. Sayce, Superintendent, Light Division, National Physical Laboratory.

Mr. R. W. Reynolds-Davies, Secretary, Institute of Fuel.

Mr. David W. Brisbane, Chairman, Local Directors, Perth, Midland Railway Company of Western Australia Limited.

O.B.E.

Mr. H. G. Savage, Head of Engineering Stores Department, Crown Agents for Oversea Governments & Administrations.

Mr. J. Floweth has been appointed Branch Manager, Nottingham, British Insulated Callender's Cables Limited, in succession to Mr. M. H. Healey, who has retired.

Mr. R. D. Watson, Manager, Lancashire District, British Oxygen Gases Limited, has been elected Chairman, Manchester & District Branch, Institute of Welding for the year 1958-59.

Mr. Walter West, Vice-Chairman & Deputy Managing Director, Leyland Motors Limited, has been appointed Chairman of Scammell Lorries Limited.

Mr. L. F. Martyn, Experimental Engineer, Simms Motor Units Limited, has been appointed Chief Research Engineer to the Simms group.

Mr. Emil Klaus, of Gossau, S.G. Switzerland, has been appointed Distributor & Service Representative, in that country, for Simms Motor Units Limited.

Mr. S. F. Smith has been appointed Sales Manager, Industrial Instruments Division, Firth Cleveland Instruments Limited.

Mr. J. Farrow, Sales Manager, W. Gilmour Smith & Co. Ltd., Glasgow, has been appointed Sales Director of that company.

Mr. R. B. Allen has been appointed Assistant Midlands Area Manager, Small & Parkes, Limited, and Mr. R. V. Collins has been appointed Assistant Sales Manager, Friction Materials Division.

Lord Riverdale has been appointed to the Board of Newton Chambers & Co. Ltd. He is Chairman & Managing Director of Arthur Balfour & Co. Ltd. and immediate Past President of the Association of British Chambers of Commerce.

Mr. A. J. Orbell, who is in charge of the North Western European Department, Overseas Division, Expandite Limited, will shortly visit Holland and Germany on business.

NEW EQUIPMENT AND PROCESSES

Miniature Fire Extinguisher

AN aerosol-type of fire-extinguisher, recently developed, makes it possible to locate an inexpensive fire fighting appliance beside each work-bench, machine, and so on, to deal with minor outbreaks of fire instantly. The trade name of the device is Gwish.

The product which, it is stated, costs less than one-third that of normal type extinguishers, contains 12 fl. oz. of extinguishing liquid. This is released as a jet spray by depressing the discharge nozzle; release of the nozzle completely cuts off the jet.

The spray is claimed to douse flames instantly and carry for 6 ft. with a 3-ft. dia. coverage. The extinguishing fluid used is a non-conductor of electricity, and the device is therefore safe and effective on all fires whatever their cause.

Gwish extinguishers are sold in cartons of one dozen, complete with fixing brackets, at 12s. 11d. each. Further details may be obtained from the manufacturer, Deb Chemical Proprietaries Limited, Belper, Derbyshire.

Oil Contamination Meter

THE lubricating properties of diesel engine lube oil are seriously impaired when it becomes diluted with fuel oil. Previously the only means of carrying out satisfactory tests has been by chemical analysis employing viscosity or flash-point, which are both involved and slow processes.

An instrument has recently been developed which applies electronic principles to the problem and gives a simple direct measurement of the dilution on a meter, without any skill on the part of the operator.

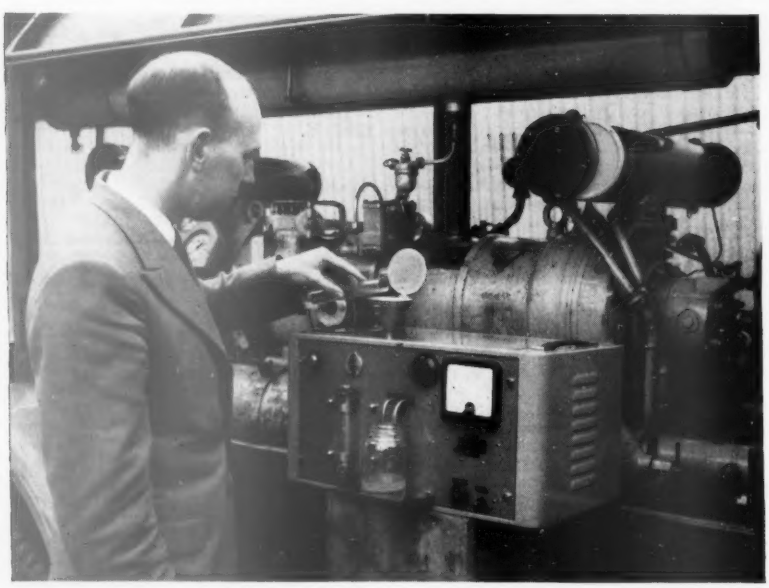
Readings can be taken under operating conditions at the rate of one every five min. The instrument is self-contained and transportable.

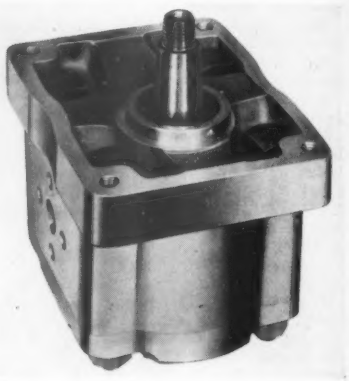
The sample to be tested is enclosed in a lagged chamber, low pressure steam passed through it, and the vapour pressure at 100° C. measured. Because of this comparatively low temperature, any light factions detected in the sample can only originate from the diluting fuel. Measurement is then performed by catalytic oxidation at the surface of a heated platinum wire.

When used with a fuel of known characteristics, the instrument will indicate a true dilution to better than ±25 per cent of its indicated reading. Thus, if the meter indicates 4 per cent dilution, the actual dilution will lie between 3 and 5 per cent. Although accuracies of this order can be obtained by existing methods, the new instrument is stated to reduce the time necessary to achieve them from about 50 min. to five.

The accompanying illustration shows a sample being tested by means of the equipment.

Further details may be obtained from the manufacturer, E.M.I. Electronics Limited, Hayes, Middlesex.



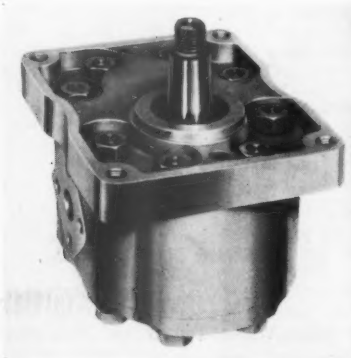


Hydraulic Pumps

TWO designs of pumps have been added to the manufacturer's range of hydraulic equipment. Known as the Beta and Gamma series, the pumps have been designed to provide a close graduation of power output, high volumetric efficiency and high-pressure ratings. They are intended to supplement the existing series of pumps.

The Beta series, which is square in shape, and covers the smaller capacities from 0·27-4·2 gal. per 1,000 rev., is designed to provide a range of robust and compact units. The Gamma series, which is oval in appearance, covers larger outputs from 4·3-46 gal. per 1,000 rev. In both designs the gears inside the casings can be varied to give alternative performance.

Improved design features of the new series of pumps, which incorporate the manufacturer's pressure-loaded bearings, include elimination of the face joint at the junction of the bearings, thereby preventing possible leakage at this point; more accurate control of relief port position,



which eliminates trapping and leakage across the contact line of the gears; and bearings which move freely in the body bores ensuring that pressure loading is fully effective. All these assist in the improved overall efficiency.

To obtain the high-pressure ratings, the bearing alignment has been controlled to close limits so that the full length of the bearing is effective. Oil feed to the bearings is taken from the suction side of the pump, whereby a relatively large volume of cool oil is passed through the bearings to provide lubrication and cooling.

The pumps can be assembled for either direction of rotation, depending on the relative positions of the driving and driven gears, and shaft extensions may be provided at either or both ends of the pump.

Porting arrangements can also be varied to suit individual requirements; the most common is the side porting design in which a port adaptor facing is provided on each side of the pump. Alternatively, tapped ports may be used for connection at each side, or on the end of the pump opposite the drive shaft.

Another feature of the Beta and Gamma series, is that a high degree of standardization of parts has been achieved, resulting in, it is claimed, a competitive selling price.

The accompanying illustrations show the general appearance of the Beta (upper) and Gamma range of pumps. The manufacturer is the Plessey Co. Ltd., Ilford, Essex.

Semi-Rigid Insulation Material for Wagons

A RECENT application of insulation materials to rolling stocks was by the Union Tank Car Company of Chicago, in using Rubatex insulated hardboard to insulate a group of railway tank wagons for transporting liquid carbon dioxide.

Based on Plioflex rubber, Rubatex is stated to have the lowest co-efficient of thermal conductivity of any structural material, is impervious to moisture and is resistant to impact. In adition, this semi-rigid insulation is not subject to destruction by vermin or termites. Easy processing characteristics of Plioflex permit thorough dispersion of the blowing agent during compounding. With an average compressive strength of 60 lb. per sq. in., Rubatex permits self-supporting construction.

Each tank is subjected to a hydraulic test pressure of 500 lb. per sq. in. and is equipped with three regulator valves and one frangible-type bursting head valve. If pressure builds up within the three regulator valves to 490 lb., the bursting head diaphragm will rupture, allowing the commodity to escape freely and leaving the tank undamaged. Reduction of pressure and temperature of the lading through evaporation of carbon dioxide is dependent on the proper functioning of these protective valves.

Although use of Rubatex for insulating railway tank wagons is unusual, the material has been used for several years in maintaining low temperatures in delivery vans, and other applications.

Plioflex is available in the United Kingdom from Hubron Rubber Chemicals Limited, Manchester. It is understood that certain concerns in this country are interested in the manufacture of this type of insulated hardboard if the demand is sufficient.

Protective Clothing

A RANGE of donkey jackets, known as the Leatherjac, has been introduced. The basic garment is manufactured from 30-oz. blue melton, with storm collar and patch pockets. The chrome leather reinforcement covers the whole of the sleeves, full length of back, and over the shoulders.

This garment, shown in the accompanying illustration, has been specially designed to meet the need for an economically priced protective garment for tunnel workers, but is suitable also for outdoor workers handling ballast, coal, and so on.

The Leatherjac is manufactured by Jeltek Limited, Green Lane, Hounslow, Middlesex, from which further details may be obtained.

Electro-Magnetic Drill Stand

THE two types of Wolf-H. & S. electro-magnetic drill stands have a usual column and headstock, but are built with a base specially designed to house powerful built-in magnets. These are centred directly underneath the column and are controlled by a protected two-stage switch alongside. This provides a "hold" value for accurate positioning of the equipment over the point of drilling before the operation is commenced. The switch is then advanced to the drill position: the magnets become fully energised and the tool is brought into circuit with the line voltage.

The strong magnetic pull enables the drill to be operated on full load and at maximum capacity, and the positive rack and pinion feed ensures accurate results with small effort. The headstock can be swung around the column for sideways adjustment by releasing the handle on top of the column. This handle is also useful for carrying purposes.

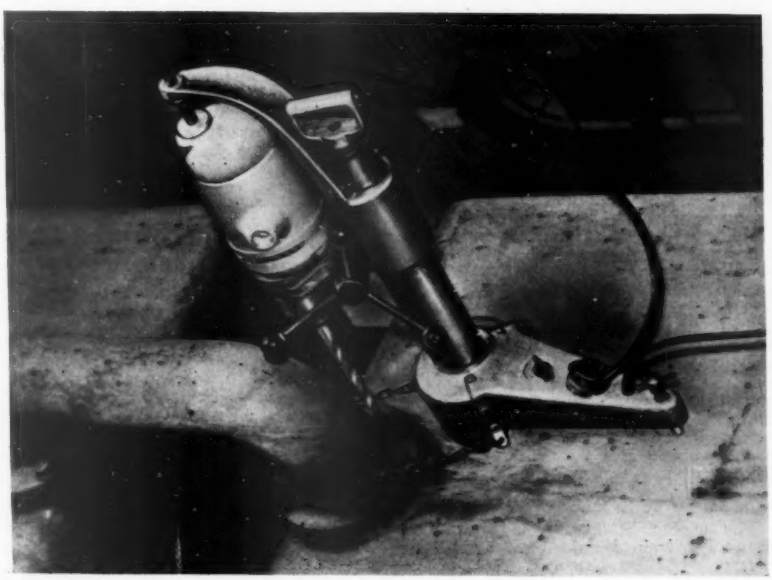
The strong safety chain is provided as a safeguard against power failure. A saddle is available to enable stands to be used for drilling pipes and curved surfaces.

Details of the two models, types FP5 and FP6, are as follow:—Capacity in steel, $\frac{3}{8}$ in., $\frac{1}{4}$ in.; magnetic-hold value ($\frac{1}{8}$-in. material), 1,200 lb., 1,450 lb.; height, $27\frac{3}{8}$ in., $28\frac{7}{8}$ in.; net weight, including drill, 52 lb., 66 lb. Details common to both models include: depth of feed, $8\frac{1}{4}$ in.; maximum distance from chuck to work, $10\frac{1}{2}$ in.; distance from base to drill centre, 3 in.

Standard voltages are 100-110, 110-150, 150-160, 200-220, 220-250, d.c., and a.c. 25, 50, and 60 cycles: 50-V. equipment can also be supplied to special order.

Prices of the FP5 and FP6 drill stands are £62 10s. and £66 respectively. Further details are obtainable from Wolf Electric Tools Limited, Pioneer Works, Hanger Lane, Ealing, London, W.5.

METROPOLITAN RAILCARS LIMITED CHANGE OF ADDRESS.—The second office of Metropolitan Railcars Limited formerly at 5, Victoria Street, London, S.W.1, has moved to 9, Westminster Palace Gardens, London, S.W.1. The telephone number, Abbey 7401, remains unchanged.



Ministry of Transport Accident Report

Allanfearn Station Crossing, September 14, 1957: British Railways, Scottish Region

Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport & Civil Aviation, inquired into the accident which occurred at about 8.7 p.m. on September 14, 1957, at the crossing at Allanfearn Station, between Inverness and Forres, when the 6.18 (Saturdays only) train from Aviemore, consisting of three coaches drawn by a class "5 MT" engine and travelling at about 50 m.p.h. under clear signals, struck a motorcar which had been allowed to cross on permission given irregularly by the signalman at Dalcross Station, killing the sole occupant. It was dry and cold with a north-west wind; visibility was good but darkness was setting in.

Situation of Crossing

The crossing is just beyond the signalbox itself at the down end of the down platform and switched out at the time, and on a minor unclassified road leading from a trunk one. It carries about 70 motor vehicles and 30 motorcycles and pedalcycles daily and flocks of sheep also are driven over it. Rail traffic amounts normally to 13 passenger and eight freight trains daily. There are two field type gates, opening away from the line, kept normally closed across the road and locked but not interlocked with the signals, with wicket gates through which motorcycles and cycles can pass. The road was a farm one when the railway was constructed and, according to the book of reference, there is no public right of way.

The crossing, therefore, is of occupation status and the railway has no statutory obligation to provide a gatekeeper. However, under an agreement made in 1859 by the Inverness & Nairn Railway Company and the occupier that company undertook to keep a stationmaster or gatekeeper at Allanfearn and the British Transport Commission has inherited this obligation. The existing arrangements, whereby the stationmaster attends to the gates while the station is open and his wife acts as gatekeeper at other times date from 1936.

There is a telephone in the signalbox and another in the station house, on an omnibus circuit with instruments in the Dalcross Station booking office, where the block instruments are located, and at a crossing near the next station in the down direction, Millburn Junction, and at that station itself. The instructions regarding the working of the Allanfearn crossing, when the box there is switched out, given with the report, require the crossing keeper to obtain permission from the Dalcross signalman before opening the gates and forbid him to give that after a down train has entered the extended section to Millburn Junction without ascertaining from the gatekeeper that such train has passed beyond the crossing. Drivers of down trains cannot see a vehicle standing at the south gate—at which the one concerned in this accident arrived—and the driver of such a vehicle moving on to the line cannot see a down train until he is past the signalbox, when the front of his vehicle is only two to three yd. from the line.

Course of Events and Evidence

The engine headlamps had not been lit as the train should have arrived at Inverness before it was dark. The train must have passed through Dalcross just before 8.3; the speed restriction there was observed and thereafter the train gained speed and reached Allanfearn at about 8.7; the usual running time is approximately 4½ min. There it was travelling with regulator almost shut on a falling gradient. The driver thought the speed to be about 50, the guard about 55 m.p.h. Passing through the station the driver saw the car move slowly on to the crossing and applied the brake fully but they struck it almost at once. The fireman also saw the car and neither thought its headlights were on.

The stationmaster's wife said that when the driver of the motor-car, a regular user of the crossing, asked to be allowed across, she telephoned to Dalcross. The signalman gave permission without hesitation; he asked nothing about the train. After opening the north gate she returned and opened the south one and the car started, she walking ahead. She was near the north gate when the car was struck. She had not looked along the line and had she done so might not have seen the train as it was getting dark; she did not hear it on account of the wind. She said she had had no difficulty in working with the Dalcross signalman.

That man, aged 23, who joined railway service in January, 1957, was posted to Dalcross as Grade 4 signalman under training and examined on February 22 in rules and regulations and signalbox instructions by an inspector; he assumed independent charge on February 25, after being seen by the Assistant District Traffic Superintendent. He said that after the train ran through he replaced the token in the instrument—the section in rear is single line—and gave "train entering section" to Millburn Junction at 8.3, entering the time at once. A car was waiting at his own level-crossing. He went to see to the gates and after replacing his signals returned to give "train out of section." The telephone was ringing and he was asked if the line was clear by the gatekeeper at Allenfearn. He saw it to be 8.8 and assumed the train must have by then passed the crossing, so replied that the line was clear and made a record of the message, without asking whether the train had in fact done so. He knew he should have asked but was so sure that the train must have cleared Allanfearn that he did not. He maintained that he definitely estimated the running time and did not forget it altogether; the time he recorded for the message was correct.

A test showed, however, that it would have taken the gatekeeper nearly two minutes to open the gates and as the accident occurred at about 8.7 the message must have been given at about 8.5. The signalman was emphatic that he had never before given a permission in this way but on occasions he had said the gates might be opened after a particular train had passed, a practice, as he agreed, also contrary to instructions.

The stationmaster heard no noise and did not realise something was wrong until he heard the screams of his wife: he went to the crossing and then telephoned to Control. He said his wife was very particular in complying with the rule that the gate further from a car was to be opened first.

The district traffic inspector saw the signalman a fortnight after he started training at Dalcross on January 28. A few questions were asked and answered satisfactorily and the relief signalman in charge assured him the new man was shaping well; he examined the latter finally on February 22 and found him quite satisfactory. He had no hesitation in allowing him to have independent charge. He had questioned him closely on the instruction for working the crossing. Visiting several times since he had watched the signalman at work; the stationmaster was quite satisfied with him. The inspector, however, noted that he had not recorded all the messages exchanged with Allanfearn, as required, and drew the stationmaster's attention to it. Most men he trained were new entrants; the majority took one or two months to pick up the work and learn rules and regulations, but this man was exceptionally quick.

Conclusion

The car driver had every right to assume it was safe to cross; neither he nor the train driver, nor the crossing keeper were in any way responsible for the accident, the result of direct disobedience of the instructions by the signalman. The time he recorded for the telephone message was wrong, and even had it been correct and he had thought it indicated the train had passed the crossing, he had no right to assume that it had.

A check of train registers at Dalcross and adjacent stations showed the signalman to be punctilious in train working except that he had, on a number of occasions omitted to record messages exchanged with the crossing, as required by instructions. They and the irregular methods adopted on other occasions for giving permission for the gates to be opened indicated he had been casual in connection with the crossing working; this was likely to lead to an accident sooner or later.

This is another accident at a manned crossing caused by failure of the human element and the type which would be prevented by automatic lifting barriers, use of which by British Railways has recently been approved by Parliament. Trials with such are to be made at selected crossings, but this one is not of the type suitable for these trials.

FRENCH NATIONAL RAILWAYS ELECTRIFICATION.—Electrification at 25 kV., 50 cycles, of the S.N.C.F. Northern Region main line between Paris and Lille is to be completed by the end of this year, as planned. It is announced that within two years all the lines in the Paris-Lille-Strasbourg triangle—or the whole of north-eastern France—will have been converted. It is estimated that this will save nearly 300,000 tons of coal a year. The journey time between Paris and Lille is to be cut to 2 hr. 5 min. by the fastest service. In the South Eastern and Mediterranean Regions, electrification of the Paris-Lyons-Marseilles main line at 1,500 V. d.c. is to be completed between Lyons and Valence by the end of this year, with work in progress on the section Valence-Avignon.

Partial Opening of Ripple Lane Marshalling Yard

Temporary working at east end following closure of three other yards

East end of Ripple Lane Yard, showing temporary working in operation

During the weekend of June 7-8, 41 sidings at the flat end of the new London, Tilbury and Southend line marshalling yard at Ripple Lane, Eastern Region, British Railways, were brought into use to take over the work of Little Ilford, Plaistow, and Ripple Lane down yards. Construction of the yard was started in January, 1957.

Ripple Lane is the first yard designed to incorporate the new principle of catering for a two direction flow of traffic in a single yard placed between running lines. This system is now being applied elsewhere. For the present working at the flat end, the yard has been divided into two groups, north and south. The north group has a capacity of 1,280 wagons, and the south group 991 wagons. Two 350-h.p. diesel-electric shunting locomotives are being used and the layout has been adapted to enable both groups to be shunted separately and simultaneously. The future up and down main lines are at present in position on either side of the yard, but for the time being the down line is being used for rail head traffic, and the up line for coal shunt traffic.

The transfer of work from Little Ilford, Plaistow, and Ripple Lane down yards to the new Ripple Lane yard has permitted other electrification work, such as the erection of carriage cleaning and inspection sheds at East Ham, to commence.

Automatic Working

Ripple Lane will have a higher degree of automation than the new yard under construction at Temple Mills, Eastern Region. At the hump end, there will be two primary retarders and eight secondary retarders of the electro-pneumatic type, the purpose of which is to space the wagons sufficiently so that the automatic points have time to operate and to allow the cuts of wagons to pass into their respective sorting sidings at acceptable buffing speeds.

A detailed investigation has been conducted into the characteristics of rolling of wagons passing over a hump, through retarders and into sorting sidings. This has shown that there is a much greater variation between the rolling resistance of individual wagons and individual cuts of wagons than was thought to exist when Ripple Lane was first planned. The retarder operators will, therefore, be provided with as much technical assistance as possible to achieve the necessary rate of shunting and to reduce the risk of higher buffing speeds than are acceptable.

Radar Equipment

This will be achieved by equipping the primary retarders with automatic weight classification equipment and radar devices to measure speed and wagon rollability. The secondary retarders will, in addition, be provided with apparatus to measure track occupation in the sorting sidings. The consulting engineers for the scheme are Sir William Halcrow & Partners. The civil engineering contractors are W. & C. French Limited, and Samuel Williams & Sons Ltd. are sub contractors for the permanent way work. The whole project is being carried out under the general direction and design of Mr. A. K. Terris, Chief Civil Engineer, Eastern Region, British Railways.

Metropolitan-Vickers at the Brussels Exhibition

Metropolitan-Vickers Electrical Co. Ltd. has exhibits in two sections of the Brussels International Exhibition which remains open until October 19.

Exhibits in the British Industries Pavilion are included in the British Electrical & Allied Industries joint display, and consist mainly of models. There are scale model locomotives, a working model of a turbine-generator, a transmission and distribution model, and two products of Metropolitan-Vickers—GRS Limited; a four-aspect searchlight signal, and multi-lamp route indicator. Metropolitan-Vickers Magistor photo-transistor relays is being used to count the number of visitors to the stand and to the domestic section on the upper floor. There is also an oil painting of the A.E.I.-John Thompson Nuclear Power Station at Berkeley.

The scale models on show include: a 1,105-h.p. class "XA" diesel-electric locomotive, one of 16 for the Western Australian Government Railways; a 1,200-h.p. diesel-electric locomotive, one of 108 for Coras Iompair Eireann; a 3,820-h.p. electric locomotive, one of 40 for the New South Wales Government Railways; a 1,072-h.p. electric locomotive, one of 24 for Rede Mineira de Viocao Brazil; and a 1,105-h.p. class "X" diesel-electric locomotive, one of 32 for the Western Australian Government Railways.

Scale model of a Metropolitan-Vickers 1,072-h.p. electric locomotive for Rede Mineira de Viocao, Brazil

Scale model of a Metropolitan-Vickers 1,105-h.p. Class "X" diesel-electric locomotive for Western Australian Railways

Staff and Labour Matters

London Busmen's Wage Claim

Prospects of an end to the strike of London busmen were reinforced last Friday (June 13) after a delegate conference representing the 47,000 workers concerned. This conference decided to recommend meetings at the various garages to be held to approve further discussions with the London Transport executive " with a view to a resumption of work being arranged at a date to be determined."

The talks on Friday began with a meeting of the London Busmen's Negotiating Committee which decided to recommend a course of action to the delegate conference similar to that which was finally approved. The Union's National Executive endorsed the recommendation at a special meeting and, after discussions lasting 3½ hr. at the delegate conference, the following resolution was passed by 94 votes to 32 with six abstentions :—

" This conference places on record its recognition of the great and sustained display of industrial action by the London busmen in support of a fundamental principle. In view, however, of the forces ranged against us, the conference is of the opinion that to continue the struggle would not be in the interests of the members. We are therefore of the opinion that further discussions should be sought with the L.T.E. with a view to a resumption of work being arranged on a date to be determined. This conference accordingly decides that a recommendation be made to the branches along these lines as specially convened meetings in order to afford them an opportunity to record their decisions."

An amendment that the strike be continued and extended was heavily defeated. At the delegate conference Mr. Cousins, General Secretary of the Transport & General Workers' Union, emphasised the difficult position in which the union was placed by the refusal of other unions to support any extension of the strike; by the reluctance of the Government to press the L.T.E. to make any further concession, and by the refusal of the L.T.E. to move from the proposals made on June 5. These proposals were that Central bus crews should have their pay increased by 8s. 6d. a week when they resume work, that Green Line coach drivers should have an increase to be negotiated as from the same date and that the pay of other workers should be reviewed and any pay increase negotiated as a result should be paid as from July 2.

It was announced on June 17, after garage meetings of London busmen, that 64 garage and maintenance depots had voted against the recommendation that a resumption of work should be discussed with the London Transport Executive and only 54 had voted in favour of it. As a result of this decision by the branches, the busmen's negotiating committee met on June 18 to discuss the position.

Commenting on the position, Mr. Cousins stated that the delegates had reported two main reasons for the branch decisions to continue the strike. The busmen wanted a clear statement from L.T.E. about their intentions on the pay of the country bus crews and maintenance men excluded from the Industrial Court Award and they were incensed at the notices posted in the garages about the duties to be worked when the strike ended which indicated that certain duties will not be worked when the strike is over because of the prospective fall in traffic.

On June 18, London Transport stated that much misunderstanding had been caused by statements at the busmen's delegate conference, held the previous day, about bus service reductions. There was no question of these adjustments being made in order to reduce the earnings of the staff.

It was pointed out that Sir John Elliot, in his letter to the staff on the eve of the bus strike and again on June 1, had made it clear that certain reductions in bus services would have to be made when services resumed. First, the number of passengers would have dropped heavily as a result of the strike, and L.T.E. could not afford to run exactly the same number of buses as before. Secondly, the strike had caused a very large increase in the staff shortage, which would make the services ragged unless reasonable planned reductions were made at once. Thirdly, the strike had caused London Transport a very heavy financial loss, some £300,000 a week, and settlement would impose heavy additions to working expenses.

The statement adds: " The cuts, so far as central road services are concerned, will result in an overall 10 per cent reduction in the mileage run; the service being run before the strike was 2 per cent below the full level because of the staff shortage. The cut is proportional on all days of the week. There is no question of these necessary reductions, as made clear at Sir John Elliot's press conference on June 1, causing any staff redundancy.

" Overall, the wages of the staff in respect of their standard working week will not be affected by the reduction. The amount of voluntary overtime and rest day working, which a minority of the staff work to make up the effects of the staff shortage, will however, be somewhat reduced. The effect on such overtime earnings would vary from garage to garage in accordance with the relation between the increased staff shortage and the reductions in bus mileage."

Municipal Busmen's Wage Claim

It is understood that no agreement was reached at the meeting on June 17 in London of a joint committee which has been considering the claim for a pay increase of some 80,000 employees of municipal bus services outside London. The union is seeking an increase of 10s. 6d. a week.

National Council for the Omnibus Industry

At a meeting of the National Council for the Omnibus Industry held in London on June 9, the employers' representatives replied to the case presented by the trade unions in support of their claims for increases in wages and alterations and improvements in conditions together with the introduction of a pension scheme.

The trade union claims were referred to a special committee in accordance with the provisions of the constitution of the council.

The claims affect some 100,000 workpeople in the provincial bus industry employed by private bus companies and undertakings controlled by the British Transport Commission.

Engineering and Shipbuilding Claims

At a meeting in York on June 12 of leaders of the Confederation of Shipbuilding & Engineering Unions, a decision was taken to put forward on June 24 a claim for a substantial increase in pay for engineering workers. A similar claim in respect of shipbuilding workers will be made on July 2. These claims follow the wage freeze for one year which applied in the shipbuilding and engineering industries up to the end of May of this year.

The C.S.E.U. is awaiting a reply from the engineering employers to its demand for a shorter working week to be introduced in stages. The shipbuilding employers have not yet heard the union's case for a shorter working week.

Pay Increase for Electricians

It was announced on June 11 that electrical contracting workers would receive an increase in their rates of pay as from the end of June of 2½d. an hr., or more than 4 per cent.

Wage talks affecting the 120,000 workers employed in the nationalised electricity supply industry were resumed on Wednesday last, June 18.

Questions in Parliament

Selling Disused Branch Lines

Viscount Hinchingbrooke (Dorset S.—C.) asked the Minister of Transport & Civil Aviation on June 11 whether he would give a general direction to the B.T.C. that it might sell or lease disused branch lines to private firms or agencies in areas where lines were to be closed for reasons of economy despite a continuing local demand for transport facilities.

Mr. Harold Watkinson: No. The Commission already has power to do this under Section 2 (7) of the 1947 Transport Act.

Viscount Hinchingbrooke: The Minister should set up a Departmental Committee jointly with the B.T.C. to examine the way in which a policy of this kind can be implemented.

Mr. Watkinson: I will gladly look at any suggestion. I hope that this does not mean that my noble friend opposes closing of uneconomic branch lines, because I must warn the House that this closure must go on. Perhaps I might take this opportunity of warning the House that it will be greatly expedited in the very near future.

Parliamentary Notes

Industrial Tax Concession

The Chancellor of the Exchequer, Mr. D. Heathcoat Amory, announced in the House of Commons on June 17 that he intended to move an amendment at the report stage of the Finance Bill to increase the scale of initial allowances for plant and machinery and for industrial buildings by one-half instead of—as originally proposed in his Budget—by one-quarter. The increase would date from Budget Day. He recalled that the relevant clause in the Finance Bill had proposed to increase the initial allowances to 25 per cent for plant and machinery and to 12½ per cent for industrial buildings. The effect of his amendment would be to raise these figures to 30 and 15 per cent.

Mr. Heathcoat Amory said that he had been considering whether he would be justified in going further two months after taking the decision on initial allowances announced in the Budget speech. He had come to the conclusion that it would be well to give some practical encouragement to industrial investment in this way. While one could not suppose that initial allowances by themselves were likely to be a determining factor in investment plans, they exerted a positive influence.

Contracts and Tenders

All-steel passenger coaches for South African Railways

South African Railways has placed a contract with the Commonwealth Engineering Co. Ltd., of Sydney, New South Wales, for 332 all-steel passenger coaches to the value of some £2,000,000. The coaches will be built in South Africa at a new factory at Nigel, in the Transvaal.

Other orders have been placed by the South African Railways with Reunert & Lenz of Johannesburg for 644 standard coaching stock bogies, and with Alpheus Dowse of Johannesburg for freight wagons to the value of £817,000.

L. M. Ericssons AB, of Sweden has received an order from the Taiwan (Formosa) Railway Administration for signalling and remote control equipment. The equipment is intended for the single track line between Changua and Tainan, a distance of some 93 miles and having 26 stations. All stations will be provided with relay switch equipment and the line with a blocking system. The signalling system for the entire line is to be remote-controlled from a central installation at Tainan. Delivery is to be completed in about a year, and the value of the order is reported to be £690,000.

The Nigerian Railway Corporation has placed a contract with Tyer & Co. Ltd., Dalston, a member of the Southern Areas Electric Corporation Group, for a C.T.C. installation to the value of some £30,000.

British Railways, Eastern Region, has placed the following contracts:—

Joseph Moss & Sons Ltd., Colchester, Essex: provision of central sub-station at Parkeston Quay

Westinghouse Brake & Signal Co. Ltd., Kings Cross, N.1: supply and installation of signalling and A.T.C. equipment between Bethnal Green, Enfield Town, Chingford, Hertford East, and Bishops Stortford, and between Basildon (20 mile post) and Shoeburyness.

British Railways, London Midland Region, has placed the following contracts:—

Leonard Fairclough Limited, London, N.W.5: stabilisation of up side cutting slope, near Charwelton Station

Wm. Latimer & Co. Ltd., Newcastle-upon-Tyne 2: contract labour only for cleaning and painting of bridges on Timperley to Garston line

Ernest Webber & Co. Ltd., Cornbrook, Manchester 16: contract labour only for cleaning and painting carriage shed, Longsight

Saunders & Taylor Limited, Manchester 3: for steam heating in general and mechanised foundries, loco works, Horwich

Brooks Ventilation Units, London, W.C.2: inlet and ventilating plant in general iron foundry, loco works, Horwich

Robert Myles Limited, Liverpool 3: staff amenities in carriage shed, Edge Hill, Liverpool

Leonard Fairclough Limited, Adlington, Lancs: diesel oil storage plant at motive power depot, Crewe North

John Bowen & Sons Ltd., Balsall Heath, Birmingham 12: general buildings work in diesel repair shop at motive power depot, Rugby

J. & E. Warrington (Hyde) Limited, Hyde, Manchester: staff association accommodation, police dept., New Bridge Street, Manchester

D. B. Evans (Bilston) Limited, Bilston, Staffs: work to existing pump house at new electricity sub-station, Shore Road, Birkenhead

Charles R. Price, Doncaster: electrical and signal equipment cabins at Crewe, Goostrey and Chelford

John Booth & Sons (Bolton), Bolton: steelwork of new bridge on Liverpool and Manchester line over Manchester Outer Ring Road at Barton Old Hall.

British Railways, North Eastern Region, has placed the following contracts:—

Hymatic Engineering Co. Ltd., Redditch: three compressor sets

Consolidated Pneumatic Co. Ltd., Gateshead: pneumatic tools

R. Watson & Company, Bolton: supply of steelwork for bridges 27, 29, and 31 between Aine and Pilmoor

Hunslet Engine Co. Ltd., Leeds: prototype 6-ft. shoulder ballast cleaning and lifting machine.

British Railways, Scottish Region, has placed the following contracts:

William Bain & Co. Ltd., Coatbridge: covered accommodation at engine hoist, Corkerhill Motive Power Depot, Glasgow

R. McCartney (Painters) Limited. Glasgow: cleaning and painting, Connel Ferry Bridge

A. A. Stuart & Sons (Glasgow) Limited, Glasgow: site excavation and retaining wall, Glasgow Central resignalling

Wilson Kinmond & Marr Limited, Glasgow: new retaining wall and extension of bridge, Sighthill Goods Station, Glasgow

Fleming Bros. (Structural Engineers) Limited, Glasgow: provision of new roof, Ladyburn Motive Power Depot, Greenock

Metropolitan-Vickers-GRS Limited, London: installation of electric colour-light signalling, Bowling to Helensburgh and Balloch, Glasgow suburban electrification.

The Special Register Information Service, Export Services Branch, Board of Trade, has received calls for tenders as follow:—

From Thailand:

70 cattle wagons for metre gauge track to be built complete with steel underframes, coupling, draft gear device, brake device, riggings, running gear, and other parts without all wooden parts for body, doors, and floor.

The issuing authority and address to which bids should be sent is the Stores Superintendent, State Railways of Thailand, Railways Organisation, Yodse, Bangkok. The tender No. is Sor. 2/12444. The closing date is August 22, 1958. A deposit of Bht. 100,000 is required. The Board of Trade reference is ESB/14755/58.

From Sudan:

26 wagon underframes, 35 ft. long.

The issuing authority is the Controller of Stores, Sudan Railways, Atbara. The tender No. is 1771. Specifications and drawings giving full particulars can be obtained from the Office of Controller of Stores, Atbara, on application. The closing date is July 7, 1958. The Board of Trade reference is ESB 14841/58.

From India:

1,400 wheel centres and tyres to I.C. Fy drg. No. T-02-009 M (D.G.S. & D. No. 10464/3; tyres rough turned and wheel centres finish machined except bore which is to be rough machined.

The issuing authority is the Director General of Supplies & Disposals. The Tender No. is SR-2/24841-H/I. Bids should be sent to the Director General of Supplies & Disposals, Shahjahan Road, New Delhi. The closing date is July 8, 1958. The Board of Trade reference is ESB/14960/58.

5,000 steel sleepers, B.G. finished, dipped and punched for 90 lb. rails in accordance with I.R.S. specification T9/50 and I.R.S. drg. No. T.460 for 90 lb. rails.

The issuing authority is the Ministry of Steel, Mines & Fuel. The tender No. is CP/18/172. Bids should be sent to the office of the Iron & Steel Controller, 33, Netaji Subhas Road, Calcutta 1. The closng date is June 30, 1958. The Board of Trade reference is ESB/15332/58.

Further details regarding the above tenders, together with photo-copies of tender documents, can be obtained from the Branch (Lacon House, Theobalds Road, W.C.1.).

The Special Register Information Service, Export Services Branch, Board of Trade, has reported that the closing date of the call from Portuguese East Africa for signalling equipment and level crossing barriers, reported on page 437 of our April 11 issue, has been postponed to July 7, 1958.

The Special Register Information Service, Export Services Branch, Board of Trade, reports that the closing date of the call from Sudan for wagon underframes, recorded on page 494 of our April 25 issue, has been postponed to July 7, 1958.

NEW TRACK LAYOUT AT MOLD JUNCTION.—A scheme involving renewal and enlargement of the permanent way layout at Mold Junction slate wharves and marshalling sidings, North Wales, is to be started next month by British Railways, London Midland Region. It is expected to increase the efficiency of the sidings, which deal with 12 regular freight trains daily and two or three special cattle trains a week. Some 630 wagons are handled daily and intensive use is made of the sidings for shunting and marshalling. Slates quarried locally are despatched by rail through five siding-connected wharves at Mold Junction; three of these wharves are to be renewed, and the other two removed to make space for six new traffic sidings needed to provide additional siding accommodation for operating purposes. Some 1,100 yd. of old track will be removed and more than two miles of new permanent way installed. The work includes extensive drainage improvements, and will involve much excavation. Demolition work includes 600 yd. of masonry wall. The scheme is expected to be completed by the end of the year.

Notes and News

Commonwealth Engineering Plans for Expansion in South Africa.—The Commonwealth Engineering Co. Ltd., of Sydney, is reported to be planning to raise £A378,000 to finance South African expansion in association with overseas interests. The funds are required to finance the company's interest in Union Carriage & Wagon Co. Pty. Ltd., which has been formed in South Africa. The paid-up capital of the new company is £500,000.

First Chemical & Petroleum Engineering Exhibition at Olympia.—The first Chemical & Petroleum Engineering Exhibition opened on Wednesday at the Grand Hall, Olympia, London, W.14; it closes on June 28. This is the first exhibition ever staged in Britain of equipment for the chemical and petroleum industries. It is sponsored by the British Chemical Plant Manufacturers' Association and the Council of British Manufacturers of Petroleum Equipment.

Locomotives Placed in Service on London Midland Region.—During the four-week period ended May 17 four diesel and one steam locomotives were placed in service on the London Midland Region. During the same period 15 steam locomotives were withdrawn (condemned). The four diesels were two 300-h.p. 0-4-0 North British diesel-hydraulic shunters; one 800-h.p. B.T.H. Bo-Bo diesel-electric mixed-traffic; and a Ruston & Hornsby 48-h.p. two-axle, 3-ft. gauge shunter for use at Beeston Creosote Works. The steam locomotive was a Class "9" 2-10-0 freight locomotive built at Crewe.

Boiler Shop Reorganisation at Crewe Locomotive Works.—Some reorganisation has recently been carried out in the boiler shop at Crewe Locomotive Works, London Midland Region, covering the plating and welding sections; these are concerned with the preparation and fabrication of sub-assemblies for locomotive construction and the welding of fabricated components generally. The purpose of the reorganisation has been to obtain a progressive flow of work, to improve working conditions and minimise accidents, provide improved accommodation for tools and small stores and better facilities for the handling and storage of gas cylinders. Attention has been paid particularly to gangways, welding compounds and a gas cylinder station.

Sheffield Steel Products Limited Results.—The ordinary dividend of Sheffield Steel Products Limited for the year ended March 31 is to be 18⅓ per cent on the capital increased by a one-for-two capitalisation issue. This is equivalent to the 27½ per cent paid for 1056-57 on the smaller capital. Group profits were £166,863 compared with £177,891 for the previous year, after tax of £150,000 (£165,000).

British Electrical Power Convention.—The 10th British Electrical Power Convention and Exhibition is being held this week at Brighton. The meeting are being held in the Dome and the exhibition at the West Street Car Park. The convention which opened on Monday is due to close today (Friday). The convention is being presided over by Sir George Nelson, Chairman of the English Electric Group of companies, a Past President of the Institute of Mechanical Engineers and of the Institution of Electrical Engineers.

Packaging, Handling, and Transportation Exhibition at Sheffield.—Sir Reginald Wilson, Chairman of the Eastern Area Board and Member of the British Transport Commission, officially opened a one-day exhibition of modern methods of packaging, handling, and transportation at the Blast Lane Goods Depot, Sheffield, last Wednesday. It was staged by the Eastern Region of British Railways in conjunction with the Sheffield Junior Chamber of Commerce and the Sheffield & Rotherham Committee of the British Productivity Council, and included practical demonstrations, a continuous film show, and a display of modern rolling stock, including an English Electric 2,000-h.p. diesel-electric locomotive and two Pullman coaches similar to that for the new Sheffield-London Pullman service to be introduced in the autumn.

Part of boiler shop, showing reorganised layout for production of fabricated sub-assemblies for diesel-electric shunting locomotives

W. Kelway-Bamber & Co. Ltd. Change of Address.—With effect from today, the address of W. Kelway-Bamber & Co. Ltd. is 70, Victoria Street, Westminster, S.W.1; the telephone number is Abbey 6860. This company is the London representative for: Samuel Marsden & Sons Ltd.; Railway Accessories Limited; John Walsh (Birmingham) Limited; and Uddeholm Limited.

British Waterways Depot at Knostrop Opened.—A large new traffic depot at Knostrop, about 1¼ miles downstream from Leeds, on the Aire & Calder Navigation, in the North Eastern Division of British Waterways, was officially opened last Tuesday by the Mayor of Leeds, Alderman Mrs. Mary Pearce. This new depot, which replaces the 100-year-old depot and basin at Leeds Bridge, forms a modern terminal for the increasing waterborne traffic between the Humber, Leeds, and the West Riding.

Public Service Vehicle Advertising Committee.—The President of the Public Service Vehicle Advertising Committee, Mr. J. H. Brebner, Public Relations Adviser to the British Transport Commission, took the chair when the Committee entertained, at the English Speaking Union on June 13, Alderman J. H. Whitaker, President of the Municipal Passenger Transport Association; other members of the Executive Council; and Mr. R. E. Hyslop, General Secretary of the Association.

Installation of an Analogue Computer by the B.T.C.—The British Transport Commission has installed an analogue computer in the office of the Chief Electrical Engineer, British Railways Central Staff, to provide advance details of train performance with the new forms of motive power which are being introduced under the modernisation programme. The information will be used to compile revised timetables, designed for the maximum utilisation of electric and diesel locomotives and trains. The analogue computer can rapidly produce a record showing the speed at which a type of locomotive hauling a given load, or a multiple-unit train, may be expected to be travelling at every point en route, the distance travelled, and the time taken to complete any part of its journey, taking into account time taken in periods of braking and accelerating, through speed restrictions, and during stops at stations. From this information freight and passenger train timetables will be compiled.

Scottish Region Sunday Train Services Reduced.—Because of the urgent need to reduce costs with the minimum alteration to established services the Scottish Region has not introduced some additional Sunday trains included in the summer timetable effective from June 9. They include the 10 a.m. and 2.45 p.m. Fort William to Mallaig and 12.20 and 5.30 p.m. Mallaig to Fort William; 9.45 a.m. Bridgeton Central to Fort William and 5.50 p.m. Fort William to Bridgeton; 9.15 a.m. Bridgeton Central to Ardlui and 8 p.m. Ardlui to Bridgeton; 10 a.m. and 12.5 p.m. Glasgow Queen Street Low Level to Edinburgh Waverley and 8 p.m. and 8.45 p.m. Waverley to Queen Street Low Level; 10.35 a.m. Glasgow Buchanan Street to Oban and 6.10 p.m. Oban to Buchanan Street; and 10 a.m. and 2.30, 5, and 7.20 p.m. Aberdeen to Ballater and 10.10 a.m. and 1.50, 5.10 and

7.5 p.m. Ballater to Aberdeen; also many trains in the Glasgow area.

Belfast Railway Museum.—The railway transport collection of the Belfast Museum & Art Gallery at Queen's Quay, Belfast, with entrance in Fraser Street, is now open to the public on weekdays from 2 p.m. to 5.30 p.m. until September 13, admission free.

Mechanised Booking Office at Euston.—The new mechanised booking office for the electric line platforms at Euston, London Midland Region, is equipped with a Multiprinter machine which prints tickets on the spot and obviates the need for racks. To operate the machine, the first of its kind at any London station, the booking clerk moves the printing carriage so that a cursor indicates the destination required, inserts a blank ticket, presses a handle, and the ticket is printed in less than one sec. Besides printing and dating tickets, the machine records details of each issue for accountancy purposes. Ten large machines of this type are to be used in the future mechanisation of main-line booking offices at Euston.

Dissolution of the G.N.R.(I.).—Under the terms of the Bills introduced in the Northern Ireland Parliament and the Dail, the Dublin-Belfast main line of the present Great Northern Railway is to be divided between the Ulster Transport Authority and Coras Iompair Eireann, and will be operated jointly. The Great Northern Railway Bill being introduced in the Dail in Dublin makes provision for additional subsidies of £175,000 per annum to C.I.E., to cover operating losses on the former G.N.R. lines. The capital liabilities of the G.N.R. are being assumed by the Government of the Republic, and the assets are to be handed over to C.I.E. free of any corresponding liabilities.

L.T.E. Underground Services Curtailed.—The London Transport District Line shuttle service between Acton Town and South Acton has been suspended on Sundays as an economy measure. The service is normally operated by one car. The branch is 1,000 yd. long and carries very little traffic on Sundays. It will continue to operate on weekdays. The service links the District and Piccadilly Lines at Acton Town with the British Railways, London Midland Region, Broad Street to Richmond electrified line at South Acton. The Holborn to Aldwych shuttle service of the Piccadilly line has been withdrawn during certain off-peak hours. The reduction in working hours is from 106½ to 42 a week.

The Port of Newhaven.—In view of the decision to suspend the Newhaven/Dieppe passenger steamer service next winter, Mr. Duncan Cramb, member of the Newhaven Urban District Council, has suggested in a letter to *The Times* that the B.T.C. should "lift the restrictions on the use of the port of Newhaven by commercial shipping, and either develop its facilities themselves, or, if, as seems likely, they have insufficient resources to do so, offer the port for commercial development." There is a pressing need, he states, for additional port facilities in the south-east, to relieve the intense congestion of the Port of London and the London markets, and to reduce the damage caused by dock strikes. "The potential facilities of Newhaven as a commercial port," Mr. Cramb considers, "have always been considerable but have hitherto been severely restricted by the railways (who own the quays and most of the adjoining land) in the interests of the ferry service."

Mechanised booking office at Euston, showing, through centre window, Multiprinter ticket printing and issuing machine

Western Australia Development Mission.—The Western Australian Government is sending a mission to the United Kingdom to endeavour to interest manufacturers and others in investing capital in the State of Western Australia, or in establishing new industries there. The mission is headed by Mr. J. T. Tonkin, Minister of Works & Deputy Premier. It will be in London on June 23, and will subsequently visit the Midlands and Scotland, returning to London on July 14 for 10 days before leaving for the U.S.A. Firms or organisations wishing to meet the mission are invited to write to the office of the Agent General for Western Australia, Savoy House, Strand, London, W.C.2.

London Midland Region Passenger Punctuality Award.—The London Midland Region of British Railways, as recorded in our June 6 issue, recently won the shield in the inter-regional competition for the greatest improvement in passenger train timekeeping. On June 13 Mr.

Main-Line Diesel Haulage in the Western Region

The "Cornish Riviera" leaving Paddington on June 16, hauled for the first time by a diesel-hydraulic locomotive, A1A—A1A Type "4" No. D601, "Ark Royal" built by the North British Locomotive Co. Ltd.

David Blee, General Manager of the Region, met representatives of the staff from all parts of the Region to show them the shield and to congratulate all the staff, through the representatives present, on the achievement. Lord Rushholme, Chairman of the London Midland Area Board, also expressed his appreciation. The Region gained the shield by showing an overall improvement of 22·32 per cent in passenger train punctuality, despite the considerable trackwork in progress in contion with electrification.

International Conference on Gearing, September, 1958.—The Institution of Mechanical Engineers is arranging an International Conference on Gearing which will be held in London from September 23-25, 1958, inclusive. About 36 papers will be presented and discussed during the various meetings.

Bridge on Fire Delays Trains in Southern Region.—Some Portsmouth, Littlehampton, and Bognor Regis trains were delayed on Friday evening when Timberley bridge, between Amberley and Pulborough, was closed because it was on fire. Both lines were closed to traffic and the current being cut off until the fire was extinguished. After current had been restored, trains were permitted to pass over the bridge with a speed restriction of 10 m.p.h.

Model Engineer Exhibition.—When the Model Engineer Exhibition, being held this year for the first time in conjunction with the Model Aircraft Exhibition, opens on August 20 at the New Horticultural Hall, Westminster, S.W.1, there will be more models than before. Silver cups, silver and bronze medals, and diplomas will again be presented by the organisers, the premier award being the much coveted Duke of Edinburgh Trophy, which can only be won by a competitor who has previously received an award for the model entered in this category.

Opening of B.T.C. Commercial Advertising Service Birmingham Office.—A display of photographs showing the various types of sites British Transport Advertising can offer its clients was the highlight of a reception at the Queen's Hotel, Birmingham, attended by some 60 advertisers and agents to inaugurate the new Birmingham offices of the British Transport Commission Commercial Advertising Service. Mr. George Dodson-Wells, Chief Commercial Advertising Officer, was at the reception, and the guests included Mr. G. A. Hoffman, Managing Director, Longleys & Hoffman Limited. The opening of the premises was recorded on page 688 of last week's issue.

British Transport Commission Visit to the North-West.—In accordance with the policy of holding some of its meetings outside London so as to keep closely in touch with local industrial, business, and trading interests, the British Transport Commission arranged to meet in Manchester yesterday (Thursday). While in Manchester, Members visited some transport installations in the area, including Horwich Locomotive Works and British Road Services depots, and they are due to make a similar tour of rail and road depots in Liverpool today. The venue of the formal business meeting yesterday, under the chairmanship of Sir Brian Robertson, was the former Lancashire & Yorkshire Railway Company board room at Hunt's Bank. While travelling to Liverpool today, a party is to inspect progress on the Manchester-Crewe electrification project. During the visit the Chairman and Members of the Commission are meeting many people prominent in civic affairs, trade, and industry in the North West, also local officers of British Railways and other nationalised transport undertakings.

Engine Shed Reconstruction at Patricroft, L.M. Region.—Work is now in progress on the reconstruction of the "old" engine shed at Patricroft motive power depot, only a small section of which remained after the major part of the shed was dismantled some years ago. The London Midland Region expect to complete the reconstruction by the end of the year. The shed is being built to modern design standards and will be used for servicing steam locomotives. The new shed is to be 173 ft. long and 104 ft. wide and will span eight tracks. The roof of asbestos cement sheets and patent glazing will be supported at the sides by steel columns encased in the brick walls and in the centre by a row of steel columns. The roof girders, frames and bracing are fabricated from old steel railway rails. The work, apart from the patent glazing, is being carried out by railway staff under the direction of Mr. J. Taylor Thompson, Chief Civil Engineer of the Region, who was also responsible for the design. Sub-contract work will be carried out by W. G. Kaleyards Limited, of Chester.

Railway Stock Market

The uncertainty which has ruled in stock markets for some while has given way to a more cheerful tendency. Sentiment was helped by prospects of ending the bus strike and the better labour news from other industries, which it is widely assumed in the City, is likely to be followed by a reduction in the bank rate to 5 per cent. It is thought in many quarters that if it had not been for the bus and dock strikes, the bank rate would already have been cut to this level. Moreover hopeful views have also gained ground about the world trade outlook, following the decision of the U.S.A. to resume stockpiling copper, and rumours that stockpiling other metals may also be re-started.

Sentiment in regard to Antofagasta Railway stocks was helped by improvement in the price of copper and by hopes that traffics may take a better trend before long. The ordinary stock at 14¾ compared with 13½ a week ago, while the preference stock gained a point at 29½; the 5 per cent (Bolivia) debentures changed hands at 93¾. Chilean Northern debentures remained at 38 and Costa Rica ordinary stock at 17, while Paraguay Central debentures changed hands up to 12.

On the other hand, United of Havana second income stock eased from 6½ to 6¼ and San Paulo Railway 3s. units were easier at 2s. Brazil Railway bonds have marked 5. Mexican Central "A" bearer debentures rose from 65 to 66½, while elsewhere, International of Central America shares were again quoted at $20½ and the preferred stock at $123.

Canadian Pacifics reflected the better Wall Street trend, and were $51½, compared with $49¾ a week ago; the 4 per cent debentures kept at 65¼, but the 4 per cent preference stock eased from 54 to 54½. White Pass shares lost some ground at $13⅞, compared with $14¼ a week ago.

In other directions, Nyasaland Railways shares have changed hands around 11s. 9d.; the 3½ per cent debentures were again 58½.

Among shares of locomotive builders and engineers, Gloucester Wagon 10s. shares held firm at 15s. and Wagon Repairs 5s. shares at 11s. 3d. On the other hand, Beyer Peacock 5s. shares remained easier, and at 7s. 9d. were slightly lower. Shares of the latter company now give a generous yield of over 9½ per cent. Charles Roberts 5s. shares held at 7s. 9d. and elsewhere, Westinghouse Brake have been firm and slightly higher at 39s. 6d. North British Locomotive at 11s. 4½d. were virtually the same as a week ago and Birmingham Wagon 16s. 6d. Associated Electrical at 47s. 9d. have been steady, helped by the reference to the company's good order book made in the prospectus for the 6 per cent debenture issue. Success of this issue was in accordance with expectations and reflects widespread confidence in the group's position and outlook.

General Electric shares have strengthened further to 31s. 3d., while Crompton Parkinson 5s. shares at 10s. 6d. maintained their recent good rise. English Electric kept firm at 51s. 6d. and J. Stone (Holdings) at 47s. 6d. remained under the influence of the good results, but on the other hand, Cammell Laird 5s. shares have receded to 7s. 1½d. and Vickers at 28s. 7½d. also moved lower on balance. British Timken eased a few pence to 47s. 3d. Metal Industries were 30s. 9d. "ex" the issue for cash to shareholders of the company's holding in British Oxygen shares, which will provide Metal Industries with resources for expansion in other directions when opportunities occur. British Oxygen shares were 33s. 6d.: in their statement the Metal Industries directors emphasised the good investment merits of British Oxygen shares.

G. D. Peters were again quoted at 23s. 1½d. and Dowty 10s. shares have moved up from 30s. to 31s. 6d. Ransomes & Marles 5s. shares were 10s. 10½d., T. W. Ward have strengthened to 75s. 3d. F. Perkins 10s. shares were 9s. 7½d. and Ruston & Hornsby firm at 25s. 3d. British Aluminium held their recent good rise to 43s. and in other directions, Pressed Steel 5s. shares were 14s. 9d. B.I. Cables were 45s. 9d., Henleys Telegraph 10s. shares were 11s. 3d. and Johnson & Phillips 19s.: the outcome of talks starting up for a possible merger between the two last named companies will not be decided for some while, and meanwhile the shares of both will be expected to move fairly closely in unison. Steel shares have eased following the half-yearly statements showing a sharp fall in profits because of reduced demand. Nevertheless, the City view is that steel companies should be able to maintain their dividends at last year's rates.

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